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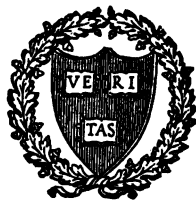
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HORTICULTURIST

AND

JOURNAL OF

RURAL ART AND RURAL TASTE,

DEVOTED TO

HORTICULTURE, LANDSCAPE GARDENING, RURAL ECONOMY,
RURAL ARCHITECTURE, POMOLOGY, ETC.

Illustrated with Numerous Engravings.

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PROFIT OF APPLE GROWING.

THE apple is the great standard among fruits, as wheat is among grains, or potatoes among vegetables. Some localities, of course, give better returns than others, but everywhere the apple is looked to for a crop as is the potato, and it depends much on the cultivator's skill in managing and selecting varieties as to the amount of returns. Niagara County, N. Y., is put down this year at 180,000 barrels, and in that county one tract of apple orchard produced for sale 600 barrels of fruit, which sold at \$3 per barrel. One tree of Rhode Island Greenings produced *twenty-six* barrels. H. T. Brooks, Esq., at the New York State Fair, during one of the evening discussions, gave, among other evidence of the profits of apple growing, the following:

"A tree in Middlebury gave 11 barrels; four trees in LeRoy, 13 barrels each. Patrick McEntee, of Perry, took 14 barrels of Baldwins from one tree, and sold them to A. W. Wheelock for \$60. Mr. True, of Castile, took 15 barrels of Gilliflowers from a single tree. Enos Wright, of Middlebury, sold the product of two trees for \$100. Two years ago Mr. Hammond, supervisor of Middlebury, sold the product of 33 trees of Northern Spys for \$900. C. Cr. akhite sold the apples on less than four

acres for \$1,000; they were immediately resold for \$1,500. He said that Edmund Morris, the admirable author of 'Ten Acres Enough,' who, by-the-by, with the usual consistency of preaching farmers, had added 13 acres to his 'Ten,' wishing to do some tall bragging, had told us of 20 apple-trees that paid their owner \$225 one year. Here, said Major Brooks, is a story to match: Robert McDowell, of York, Livingston County, has 22 trees, grafted nineteen years ago to Dutch Pippins, Greenings, Russets, etc., standing 35 to 40 feet apart—his soil sandy loam, annually plowed and cropped, being also heavily manured every year, and protected by woods on three sides. He sold from these trees, after reserving his culls, in 1865, 163 barrels of apples for \$779 50.

"Prescott Smead, of Bethany, Genesee County, from six acres, on clay and strong clay loam, sold as follows:

1862.....	750 barrels.....	\$2,370
1863.....	590 do.	1,790
1864.....	600 do.	2,100
1865.....	810 do.	4,500
1866.....	150 do.	863
1867, (estimated).....	600 do.	3,000

"Add to the above, copied from his income report (and reports of this kind are not apt to be overstated), apples used in the family, and we have 100 barrels to the

acre, and 2½ barrels to the tree *annually*, for the whole six years, paying \$400 per acre every year for the whole term.

"For practical cultivators there is another fact of great significance. This same orchard, after coming into full bearing for some ten years, received only ordinary care, which means scarcely any care at all, and its returns were very meagre. It was then heavily manured, plowed shallow, and suffered to lie one year; then cross-plowed and harrowed, and suffered to lie two years longer, all the time uncropped; then it was manured again, and the same treatment repeated. The results were as has been stated.

"S. P. Lord, of Pavillion, bought a neglected, and, of course, unfruitful, orchard of seven acres—trimmed, manured, and plowed it, when it immediately commenced

bearing, and during the next six years yielded \$6,000.

"He recommended careful and moderate annual pruning where necessary, as contrasted with the too frequent slashing to which trees are subjected—keeping the heads of the trees low, which would favor ease in picking—objected strongly to the common neglect of cultivation, and also to the close cropping of the ground, in the attempt to obtain other products from the soil, the strength of which should be given to the trees. He cited cases where good clean culture had given high profits, and added that in nearly every instance where very large crops had grown on single trees, he had found those trees to stand near wood-piles, slop-grounds, barnyards, or on other spots where they received a good supply of enriching material.

WINDOW GARDENING.

THOUSANDS of persons, fond of flowers, are, during a great portion of their lives, confined to the house, even if they have a garden or pleasure ground in which Flora's treasures are growing and blooming. To meet this love of the beautiful and gratify the taste, the common practice is to grow a rose or geranium in a pot upon the window-sill, or a stand near the window. Those who have command of means have had aquarias constructed, but rarely with any satisfaction to meet anticipation. Some time since, the *London Gardener's Magazine* gave a representation of a case constructed in the window by removing the entire lower sash, and then projecting a frame to cover the whole width of the sill, inside and out, raising the lights and curving them until the top met the lower part of the upper sash; the bottom of the case to be made like a draw, showing paneling, to give artistic appearance, and to have its drainage made so that any surplus water that should be given the plants

would escape from the outside. In this draw the earth is to be placed, and the plants either set directly in it or they may be in pots, and the draw filled to surround and cover the pots with moss. The cost of construction of this form of window-case would be quite small, and, except in severe weather, it would be no trouble, and mostly out of the way. It should be made, of course, to fit the window, and movable on approach of really cold weather.

Another mode is to have a draw eight or ten inches deep, and projecting into the room four to eight inches, having the sides, or ends rather, carried up as panels next the window, and sash-doors hung on the inside opening into the room. In the draw, pieces of rock and soil are placed, and the plants set among them and trained as they grow up the side or end panel work. The effect of this in the long French window is very good, especially when care has been taken to get plants that are good climbers, and with broad glossy foliage.

THE SERVICE BERRY—PYRUS ARBUTIFOLIA.

FROM the journal of my son, Henry W. Elliott, during his three years' trip connected with the laying of the Overland Telegraph Company's wire in British Columbia and Russian America, I take the accompanying drawing of the arbutus-leaved aronia, commonly called service berry.

Quoting from his journal, he says: "The mountains and valleys of British Columbia

over which fire has swept, consuming all the timber, and leaving nothing standing after its departure, are covered with a growth of young poplars and the service berry shrub, which does not attain any great size, although I have seen them ten and twelve feet in height, but rarely exceeding three and four feet. The berries are ripe in August, and hang on until frost.



FIG. 1.—*The Service Berry—Pyrus Arbutifolia.*

The bears revel among them at this time of year. Millions of bushels ripen and fall to decay."

Loudon says the grafting of the aronia, or service berry, strictly *Pyrus arbutifolia*, on the common thorn, renders it one of the truly ornamental shrubs. Some years since I received from R. P. Fulker-

son, Esq., some plants of a dwarf variety of the service berry, which gave a pleasant little fruit; but its want of character on its own roots led me to neglect it, and I have lost it. As a novelty and an ornamental shrub, I notice this now, that our growers may take hold of and introduce it.

F. R. E.

TWO NEW APPLES.

BY F. R. ELLIOTT.

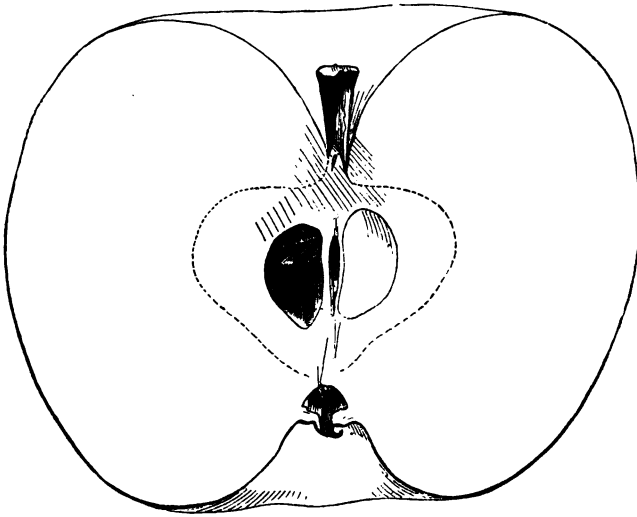
AMONG the many apples sent me this past season, the following certainly "promise well," and I therefore send drawings and descriptions to be put on record, and to draw the attention of tree planters, that they may obtain and test them in other than their native localities. I am indebted to Mr. George Husmann, well known among fruit men as an energetic, enthusiastic, but careful observer and propagator, for the

sample specimens from which my drawings and descriptions were made.

BERGNER.

Originated with G. Bergner, near Hermann, Mo., and is there grown as a profitable market variety.

Tree, a rapid grower, with strong branches, somewhat drooping; hardy, and an abundant bearer.

FIG. 2.—*Bergner*.

Fruit, large, roundish, flattened at both ends, obliquely angular. Color, a rich yellow ground, almost entirely covered with clear rich red, and this somewhat striped and splashed with shades of maroon red; near the calyx or bloom end the ground or yellow prevails; yellow, gray, or russet dots and splashes over all. Flesh, yellow, crisp, juicy, sprightly; rich aromatic, slightly quince-like, flavor. Stem, short; cavity, open, regular, deep. Calyx, small, closed,

basin shape, deep, very slightly plaited at base. Core, small, capsules well filled with seeds. Season, late winter and early spring.

• NAIGILE'S WINTER.

Originated some twenty-five years since with one Charles Naigile, who is now dead.

Tree, an enormous bearer of fruit, which is always smooth and perfect. Growth, upright while young, but as it reaches maturity becomes drooping in its branches,

because of its loads of fruit which hang in perfect "ropes."

Fruit, medium, roundish, flattened at both ends, slightly angular. Color, a bright yellow ground, covered in season with two

shades of red, and with many large yellow gray dots. Skin, quite smooth and covered with a clear light blue bloom, which when rubbed off leaves the skin glossy. Calyx, closed, with long segments; basin, open

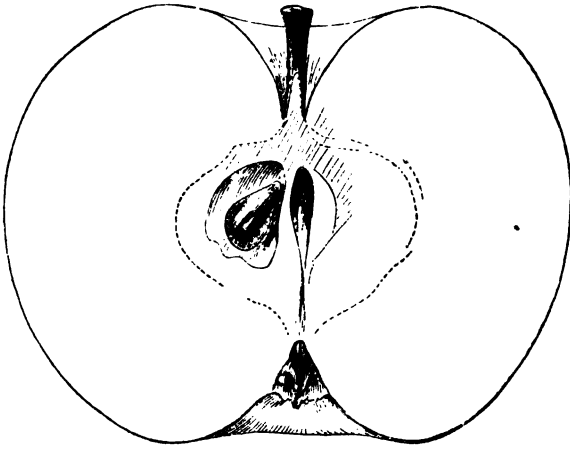


FIG. 3.—*Naigile's Winter*.

rather than moderately deep. Stem, short, slender; cavity, open, acute, or deep, smooth, and regular. Flesh, white, crisp, tender, juicy, mild, subacid, very much

like the old *Fameuse* apple. Core, small, compact. Seeds, plump, broad, ovate, pointed. Season, early, and midwinter.

DOUBLE PYRETHRUMS.

OUR readers will remember that during the past year we noticed a fine show of Double *Pyrethrums*, in colors, which we saw at Messrs. Ellwanger & Barry's, Rochester, New York; and if they have been wise, they have determined that plants shall grace their flower-beds this coming season. The following, from the *London Florist*, describes many new varieties, and tells the whole story:

"Any attempt to chronicle the improvements made during the past few years among the flowers employed for garden decoration would be incomplete without some allusion to the greatly improved

forms of the Double *Pyrethrum*. Only a few years ago a Double *Pyrethrum* of the section now under notice was a thing unknown. But that patient enterprise that works out so many astonishing revolutions in the world of horticulture has been applied with great success to this flower, and we have now among us a valuable summer-flowering plant for the open ground—one thoroughly hardy, being altogether an outdoor flower, and at the same time thoroughly valuable for the embellishment of shrubbery and mixed borders.

"The history of the improvement of this flower is just the simple process that has

worked such happy results in the case of other popular flowers. Received from the Continent by Mr. John Salter, of Hammer-smith, in a form suggestive of a much higher order of development, it was at once taken in hand, and by careful seedling, year by year, semi-double flowers became resolved into fully double blooms; increased size both of floret and flower-head followed in the wake of fuller substance, and with these came that coveted variation which always gladdens the heart of the florist—a breaking away into new colors, or combinations of color, even to a much larger degree than was at first reasonably expected. And so, bringing up the 'record of progress' to the present year, the rich and varying beauty of some of these flowers really surprises one who has inspected them, seeing what a comparatively short space of time has been devoted to perfecting them. They are certainly a valuable addition to our hardy herbaceous plants. That they grow somewhat lanky is really no tenable objection against them, as they can easily be tied up to stakes in common with many other herbaceous plants. But it is not improbable that this objection will soon be altogether removed, inasmuch as some very dwarf-growing varieties are now showing themselves in the seedling-beds, in the same way as has been observed among the Antirrhinums for instance, and there is no loss of any good qualities in these dwarf-growing kinds, while their dwarfness is a great gain. They remain in bloom for a considerable time, commencing early in July, if not earlier, and they are even now (the second week in September) in full bloom, as the plants throw out a succession of lateral shoots that become floriferous.

"Then some single-flowered varieties of the Pyrethrum are also undergoing a collateral improvement, though they only bear about the same relationship to the double-flowered kinds that the single Anemone-flowered Chrysanthemums do to the splendid and full double flowers. Still, they are

moving along in the march of improvement, increasing year by year in size of flower, in breadth and roundness of floret, and in diversity of color. They are easily propagated; this is another recommendation in their favor. They can be multiplied by taking off cuttings either in the autumn or early in the spring; these should be put into a bed made ready for them in a cold frame, or else be put out on a shady border, and protected by a hand-glass. A good rich soil is all that is required to induce them to root.

"I have endeavored to arrange under certain heads of color some of the showiest and best varieties. Under the head of Carmine and Red may be put the showiest and brightest colors. Of these the following can be well recommended: *Emile Leomine*, a fine continental variety, color deep rosy carmine with bronze center; *Modele*, a fine shade of carmine red, but with a tendency to come single; *Carminatum plenum*, dark carmine; *Fulgens plenissimum*, dark red, a large and handsome flower; *Imbricatum plenum*, bright rosy carmine, the flowers of great size and showy; *Rose Perfection*, a dark but pleasing shade of rosy carmine; *Prince of Wales*, dark carmine shaded with bright red, a striking shade of color, flowers large and full.

"Rosy Lilac and Purple shades will well represent the next section. A distinct purple hue is evidently soon to be obtained, but at present it is somewhat mixed with rose. The most noticeable under this head are *Miss Plinkie* (Salter), new of 1867, pale rosy lilac, with a light center, the flowers large and full, and belonging to what Mr. Salter denominates the Ranunculus-flowered section, inasmuch as the florets forming the center of the head are flat instead of being quilled, as is ordinarily the case; *Lischen*, another continental variety, rosy purple with paler center; *Madame Calot*, deep rosy purple, a very effective shade of color; and *Barral*, a very fine and double crimson purple flower, one of the best of the dark colors.

"Of shades of Rose there are Salter's *Alfred Salter*, vivid rose, a fine flower; *Iveryanum*, bright rose, the flowers large and full (this variety is somewhat dwarf in its habit); *Nemesia*, dark glowing rose, showy and fine; *Paul Journou*, soft rose with light center, another dwarf-growing variety; *Pompon Rose*, a small but good flower of a lively dark rose shade; and *Wilhelm Krampfer*, a tall-growing variety, but of a good shade of color—namely, lively dark rose.

"Pink shades are found in the following varieties: *Nobilissimum* (Salter), new of 1867, a very large flower, having broad guard florets of a bright pink hue with a white center, one of the most distinct kinds, and very attractive; *Yolande*, rosy pink, flowers very double, and dwarf-growing; *Carneum plenum*, pinkish blush, flower large and full; *Fascination*, a very pleasing shade of deep pink; *Gustave Heitz*, a continental variety of a pale rosy pink shade with bronzy center, a fine flower, but a somewhat tall grower; *Lady Blanche*, blush, with a distinct rosy tint, very fine; *Miss Talfourd*, bright rosy pink, a pretty and pleasing shade of color; and *Mrs. Dix*, blush, shaded with pale rose, and very fine.

"There is a clearly perceptible presence of something akin to Peach color in a few

of these flowers, particularly in *Ariane*, rosy peach, the center lighter, a pretty and distinct flower; *Cerito*, clear rosy peach with sulphur center, a fine flower; and *Pet*, another pretty flower of bright rosy peach shade.

"Shades of Yellow are as yet confined to yellowish sulphur and buff. Of these the best are *Luteum plenum* (Salter), new of 1867, pale yellow, but deeper in color in the center, free-blooming and dwarf-growing; *Nancy*, a continental variety, in color creamy sulphur; and *Sulphureum*, sulphur, with a deeper color in the center of the flower, distinct and good.

"Of White flowers there are *Annie Holborn*, white, with a deep blush center; *Belle Gabrielle*, pure white, with delicate peach center, a fine flower; *Ne Plus Ultra*, blush white, a fine and bold flower; and *Princess Alexandra*, white, with a slight tint of cream, a very fine flower of great depth and substance, and dwarf-growing.

"The following are the best of the single flowers: *Giganteum rubrum*, chestnut red, flowers large and bold; *Kleinholtz*, bright crimson, fine and distinct; *Mons*, glowing crimson, a fine shade of color, flowers large and fine; *Prince Alfred*, purplish crimson, flowers large and bold; and *Sparkler*, bright reddish crimson, flowers very showy, and a fine shade of color."

THE VERGE OF WALKS AND ROADS should always be made as inconspicuous as possible. The less the verge is elevated above the walk, the less we have of harsh line to break the smoothness and harmony of blending from lawn to roadway or flower-bed. Some gardeners seem to think that a strong, harsh line, or verge of two inches deep or more, next the path, is a mark of skill; but to our taste, it is only an exhibit of mechanical labor breaking in upon the softness of nature's own laws, which always resolve into one another without any harsh or offending feature. The verge to

a path should rise from the path just as little as possible, if even extra care have been taken to cut each line, sloping underneath, as it were, so that when the roller is passed over it, the line of demarkation will be perceptible only by the change of gravel to turf.

ROLL THE WALKS AND ROADS.—Frequent rolling of the pathways, during winter, is essential to keeping them firm and smooth. It matters not whether they are traveled upon or not, they should be rolled every time when the frost is out of the surface two inches or more.

"THE GRAPE SWINDLE."

FROM childhood, Mr. Editor, I have been suffering from an incurable attack of vito-mania, and as my experience is not of yesterday or to-day, I may be excusable for clothing my opinions in the drapery of ink. The other day I received a note from an eminent amateur vito-culturist, in which he states that "*the culminating point in the grape swindle has been reached.*"

I, for one, sincerely hope that my friend may be correct regarding the attainment of "the culminating point in the grape swindle;" for a gullible public have been swindled for years by false statements contained in the most beautiful productions of the printer's art. It is amusing, as well as disgusting, to look over the huge pile of catalogues in my possession and read the glowing and transcendental descriptions of trash foisted upon the public by unprincipled parties. In some of these guides the party with \$5 to spare for an extra No. 1 plant, with three buds, will find the fair side of the picture with a sufficiency of descriptive falsehood, but not a cloud from the dark side. It seems that these figurative and descriptive gentlemen fancy that

Man wants but little here below,
Nor wants that little long.

We are of the opinion that it would be a manifestation of honesty and fair dealing if these descriptive gentlemen would cast overboard their twaddle and stuff, and add to their descriptions of vines—not thoroughly tested; liable to winter kill; mildew in some or most localities; a poor grower; not as hardy as an oak; not the best wine or table grape in America; not equal to the Muscat of Alexandria or Black Hamburgh; in other words, dispensing with the varnish and veneer that deceives a gullible and confiding public, and fills the pockets of designing and unprincipled cultivators.

Yearly we have one or more bantlings sent forth at \$5 for a microscopic specimen, with the assurance that it will beat all

creation. But, alas! the poor deluded purchasers are the only ones who suffer; for when they test their last dearly purchased pet, they discover that they have little else than a page of adjectives clothed in printer's ink. If we possessed the temerity, we could mention the name of one renowned for his adjectives and transcendental bosh, who has sent out at least one dozen of these wonderful productions, and, strange to tell, not one of them has stood the test of cultivation. Who can estimate the pecuniary loss sustained, or the disappointment incurred by the public through the misrepresentations of this vito-garometer?

We are of the opinion that the period has arrived for at least one vine-grower to publish an accurately descriptive catalogue, giving the dark as well as the fair side. In the event of any honest man being guilty of this meritorious act, we will liberally subscribe toward a statue to be erected in commemoration of the noble deed, so that his name may be handed down to posterity as a public benefactor. We would most humbly and respectfully suggest the propriety of some one of the fraternity publishing an accurately descriptive catalogue, calculated to enlighten and benefit the community—a catalogue giving *in extenso* the faults as well as the good qualities of the vines in cultivation. Such a meritorious individual would make his fortune, for the public would at once award him the title of a fair dealing, honest man, and extend to him a corresponding patronage. Unless some such course is adopted, vine-growers will have to "hang up de fiddle and de bow," and engage in stock jobbing, or some such employment, where they can find a sufficiency of dupes. Americans are a gullible people, and run away with some mania for a time, and designing and unprincipled parties are ever ready to take advantage of their weakness. The

mania followers consent to be sold for a time, but ultimately fly off at a tangent, becoming deeply prejudiced against everything savoring of their defunct pet. We have been credibly informed that vine-growers are clothed in sackcloth and ashes, lamenting the want of customers, and that some of the leading landmarks among them have already reduced their prices fifty per cent. This was to be expected; and we predict that Extra No. 1 two-year-old vines, equaling Hamburgs and Muscats in flavor, will be plentiful and cheap in the autumn of 1868.

The vito-mania has reached its "culminating point," and unless vine-growers adopt a different course, the cultivation of the vine in the United States will receive a check from which it will not recover until vine-growers and their bantlings go where—echo answers where? With all due deference to the staff editorial as well as authorial; we have an inkling that they are, to a certain extent, censurable for giving undue prominence to new and unfledged bantlings; but as we are touching upon sacred ground, we must refrain from giving particulars.

Now, sir, as a guide for the uninitiated, I sometimes fancy that amateurs who "have no axes to grind" should publish the results of their experience and observation, and thereby benefit those who are exposed to an attack of vito-mania. The masses want a vigorous growing vine that will produce fruit of a fair quality,

that will flourish in favorable as well as unfavorable circumstances, never mildew—never requiring an expenditure for sulphur or sulphurating bellows, and last, though not least, standing our winters without protection, leaving the new-fangled bantlings of unprincipled venders for the experimentation of vito-maniacs like the writer.

I will as briefly as possible give my experience during the last summer. My situation is elevated; exposure, good; soil, light sandy loam; subsoil, light, with perfect drainage; number of vines under cultivation, about two thousand; number of varieties, too numerous to mention.

Mildew appeared on the vines in the order as named: Iona, Rogers' 5, 15, 19, and 25; Israella, Delaware, Adirondac, Creveling, Maxatawney, Allen's Hybrid, Lydia, Alvey.

The only varieties that entirely escaped mildew and produced a vigorous growth were the Concord, Hartford, Christine, Clinton, Ives, and Arrott. Our advice to the uninitiated, based upon some observation and experience, is—If you want fruit for your families, plant Concords and Hartfords; if you want fruit rivaling the Muscat of Alexandria and Hamburg, erect a cold grapery and plant Muscats and Hamburgs; but if it is desired to waste money, buy the last bantling sent out by some designing vine-grower, and patiently await disappointment and vexation.

AL FRESCO.

HORTICULTURAL CLUBS.—It is surprising what an amount of information can be had when a neighborhood forms a club to meet weekly and strike their brains together—each telling of his successes and failures, his modes of culture, etc.—resulting in ideas and thoughts heretofore entirely new. We know several such clubs, or weekly gatherings, and suggest to all our readers that they should, one and all, form or join

one. Take the district school-house for the meeting, if no better be had, or meet weekly from house to house of the members. Organize with a president and secretary, a business committee, and conduct the deliberations in parliamentary order, and our word for it you will be gratified and astonished at the results—at the amount of information which will accumulate in your secretary's books.

UTTER APPLE.

WE have received specimens of this fruit from T. D. Plumb, Esq., of Madison, Wisconsin, who describes it as a very popular variety at the West, where known, and is thought to be as valuable there as the Baldwin is in the Eastern States. The specimens sent us were picked from a tree overloaded with fruit, and are, consequently, smaller than if the fruit had been properly thinned. A specimen of last year

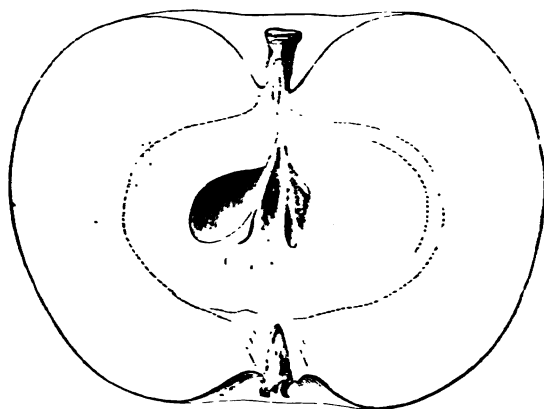


FIG. 4.—*Utter Apple.*

weighed 11½ ounces. Tree, a regular bearer, and hardy in all the Northwestern States. Our description is as follows:

Fruit, medium size, globular flattened; color, pale lemon yellow ground, narrow stripes, and mottled with light clear red, the stripes showing deepest—scattered

raised small russet dots; stem, slender, short; cavity, open, smooth, deep; calyx, closed; segments, narrow, pointed; basin, broad, open, deep-furrowed; flesh, whitish, crisp, tender, juicy, mild, subacid, pleasant, but not rich; core, medium; seeds, globular pointed; early winter or late fall.

ABOUT PEACHES.

BY F. R. ELLIOTT.

"WHEN I came to this country, some twenty-five or thirty years since, the failure of a peach crop was the exception, not the rule. Now it is reversed, and I feel very much like cutting down my trees, or, at least, not planting any more."

Such is about the burden of remarks by many fruit-growers in different sections of our States, and, without presuming to assume that I know the cause, I feel that the peach is too good a fruit to be given up, and too profitable a crop, where successful, not to have many planters of it by the hundreds

and thousands of trees. The record of successful fruiting, or rather of fruiting at all, the past season, covers a pretty large territory, but not at all such as it should; and many sections where, heretofore, in early days, peaches were counted as a sure annual crop, have this season produced but very few. In my section of country the peach blossomed abundantly, and set its fruit; but shortly after we had a cold wind for a day or two, and immediately thereafter the curl of leaf attacked nearly every tree. Many varieties, as Hale's Early, Early

York, etc., all, in fact, of the white-fleshed peaches, were so injured, and the trees so long in regaining a new foliage, that their fruit mostly dropped before becoming half grown. Native seedlings also were as much affected as budded varieties, and only the strong, vigorous growing, yellow-fleshed sorts, such as Crawford's Early, Smock, etc., recovered in time to renew circulation and retain their fruit for maturing. The size of the fruit was, of course, small, owing to the unprecedented drought.

Some sections of the New England States have this year produced a better crop of peaches than for four or five years past, while from the South—Delaware, etc.—the New York market was abundantly supplied; but either from the excess of rains on the Atlantic coast this season, or some other cause, the size and quality of the fruit may be said to have been poor. New Jersey, a State from which usually large quantities of fine peaches are sent to market, this season gave very few really good fruits, except some of the late ripening yellow varieties. Westward, in Ohio, while, as I have said, the crop in the northern part of the State was pretty much destroyed by the curl and long drought, the high or hill lands of many sections in the southern central part gave large crops and very much of fine fruit, although the drought measurably affected its size. Farther on, in Illinois and Missouri, peaches were abundant, and many of them very fine, while the crop at St. Joseph and along the shore of Lake Michigan was perhaps quite sufficiently abundant to be satisfactory.

These statements, while showing the peach a paying crop in certain locations, when reconsidered, and the extent of orchards and gardens estimated—where trees are plenty, but no fruit—presents a very poor show for the peach as a fruit for general cultivation, which it has ever been considered. Why this failure from year to year, now, in sections where once the peach was a sure annual crop, becomes a question of great importance to fruit-growers and the

people at large, and should have careful attention and examination.

The loss of the forest, and consequent change of climate of many sections, is doubtless one of the causes of failure; but this is perceptible in the buds which are destroyed by cold; but when the buds are *apparently* uninjured, why is it that after blooming we yet get no fruit? May it not be that while the bud retains sufficient vitality to enable it to bloom, yet the extremes of cold have so much injured the wood, as well as bud, that death ensues ere full health of the tree, from renewed sap, is reached? May we not prevent the curl, as well as the destructive agency of late spring frosts, by keeping small fires of some old litter burning at the windward side of our trees during, say, a period of four weeks from the time of blooming? Will it not pay in small grounds to have our trees worked on the plum stock and trained by summer pruning, so as to create a more firm and hard wood to the peach, induce earlier ripening of the wood, and thus, perhaps, a greater amount of vitality in the bud, enabling it better to endure severe cold? Annual shortening or pruning of the peach, as originally taught by Downing, is a rare feature found in peach-tree growing; but if this were pursued from the first year, would it not give more strength and endurance, by reason of condensing the sap. If the tree be grown on the peach root, would not pruning away all the leaves and wood that are found immature—say about the 1st of October or just before severe frosts occur—serve to make the tree better capable of resisting climatic or other injury? The introduction of dwarf growing varieties may possibly be found valuable as pet trees for small gardens of amateurs, but they will never serve to fill the mouths of the hundreds of thousands of people in our cities; nor have I any great faith in the trailing system of growing, because I fear its practice will not give fruit enough to supply the masses at a price which they can afford to pay.

PROPAGATING PLANTS BY GRAFTING.

BY A. S. FULLER.

GRAFTING is governed by the same physiological principles as budding.

There must exist an affinity between the stock and cion; if not, a permanent union is impossible.

With some of the modes in use, the operation of grafting is very similar to that of budding, but with this important difference—that in grafting, a larger section of the plant to be propagated is used than in budding; besides, it can be performed upon a great variety of plants while they are dormant.

The art of grafting is one of the most ancient methods known of multiplying individual species and varieties of plants; still there is scarcely one person in a hundred who sufficiently understands the process to put it into successful practice. The same thing may be said of all the most common methods of propagating

large stocks or branches of trees; a good, strong knife, with a thick back, to make clefts in the stock; a small knife, to prepare the cions with; a wedge, grafting

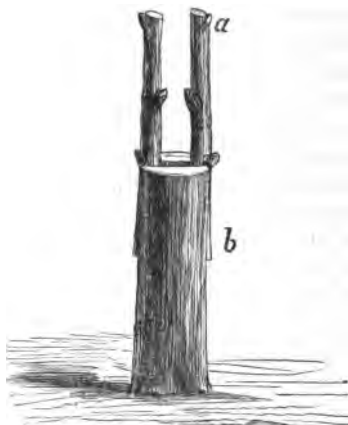


FIG. 7.

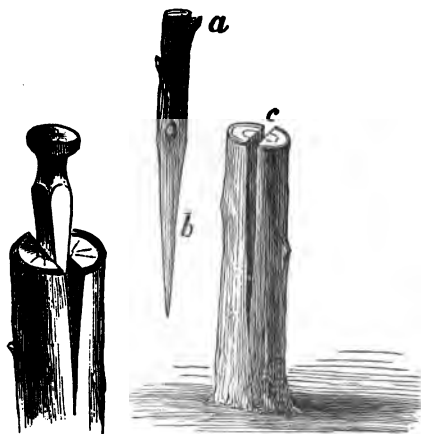


FIG. 5.

FIG. 6.

plants, oft-repeated but seldom learned by any considerable number of people of any one generation.

The implements used for grafting are: a small saw, for cutting off the heads of

chisel, and a small mallet. The above-named implements are often made of peculiar patterns, to suit the fancy of the operator; but the chief aim is to have the work well done. Other kinds of implements are used for performing particular modes of grafting, of which I shall have occasion to mention as the different methods are described.

In addition to these, bass strings, such as used in budding, for tying in the grafts, and grafting-wax, to cover the wounds and protect them from the air and water, are necessary.

There are many kinds of grafting-wax in use, as well as other compositions, which answer the same purpose. A composition made of clay, fresh cow manure, and cut straw was the principal material used in grafting until the present century. It was prepared as follows: Take a quantity of

good strong clay and some fresh cow manure, add sufficient water to make it the consistency of thick paste, add a little fine cut hay or straw; if a little salt—say one pint to the bushel—is added, it will assist it in retaining moisture. This composition should be made several weeks before it is wanted for use, and be thoroughly worked over as often as twice a week, until used, for the more it is manipulated the better. This composition is but little used at the present time; but there are a few nursery-men who prefer it for some kinds of plants to the more modern grafting-wax. There are many different kinds of grafting compositions recommended in the various works on gardening, which proves conclusively that the exact proportions of materials, or, in fact, the materials themselves, if of like nature, are not very essential to success. About a hundred years ago, a composition made of the following materials was considered most excellent, if not the very best: 1 lb. pitch, 1 lb. rosin, $\frac{1}{2}$ lb. beeswax, $\frac{1}{2}$ lb. hog's lard, $\frac{1}{2}$ lb. turpentine—melted and well mixed together. While in a liquid state it was spread upon thick tough paper or thin muslin; after it had become cool, the paper or muslin was cut into narrow strips of any required size, and then answered the double purpose of strings to hold the graft and for excluding the air and water from the wounds. These waxed strips are in common use at the present day in grafting small stocks of fruit trees and other kinds of woody



FIG. 8.

plants. For grafting in the open air, the following compound is probably in more general use in this country than any other: rosin, four parts; beeswax, two parts; tallow, one part—melted together; and after it has become cool it is applied by hand,

or when in a liquid state it may be applied to paper or muslin. If it is to be used in very cool weather, then add a little more tallow. Linseed oil is sometimes used instead of tallow, in the following proportions: rosin, six pounds; beeswax, two



FIG. 9.

pounds; linseed oil, one pint. Judging from my own experience, I consider tallow much preferable to oil, and I would warn the novice against using indiscriminately the different kinds of oils, as an occasional inexperienced person has done to his loss. Gum shellac, dissolved in spirits of ammonia or alcohol, collodion, etc., are sometimes used, but not so generally as the compositions already named.

In all the different modes of grafting, great care should be observed in having the external surface of the wood of the stock and cion to be exactly even—no matter whether the external surface of the bark is even or not. This allows the new cells, which form between the bark and wood of both stock and cion, to unite and form a channel, through which the sap can readily pass. The sap ascends through the wood of the stock into that of the cion (graft), causing the leaves to expand, which, in their turn, assimilate it, preparatory to its return, as stated in a previous chapter.

The time for grafting most kinds of woody plants in the open air is in the spring, just before or at the time the sap begins to liquefy, varying the time to suit the different species, for experience has demonstrated that there are some which may be operated upon much earlier than others. It has also been discovered that the small branches of even the most hardy trees are often injured by severe cold weather; therefore, when these are wanted for cions, it is best to take them from the parent stock in autumn, soon after the leaves have fallen, and preserve them in earth, charcoal, saw-dust, moss, or some similar material, where they will be cool—not frozen—and just sufficiently moist to prevent shriveling.

Cions of ripe wood may also be cut at the time they are used, but their vitality is often weakened by the severity of the weather, and the delicate tissue injured to such an extent that it will not form what is termed in grafting granulation (although it is precisely the same as the callus on

matured, and selected from the most healthy and vigorous branches. The fol-



FIG. 11.

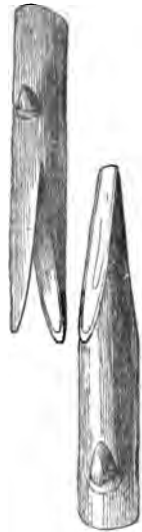


FIG. 12.

lowing are some of the most common methods of grafting:

CLEFT GRAFTING.

This method is principally used upon large stocks or on the branches of old trees. The stock is first cut off at a point where it is desirable to insert the cion; it is then split with a large knife or chisel—being careful to divide the bark, at the same time leaving its edges smooth. When the knife is withdrawn, an iron or hard wood wedge is inserted in the center, or at one side of the stock, as shown in fig. 5; the cion is then cut in the form of a wedge (b), and fitted into the cleft (c), fig. 6; the wedge is then withdrawn, and the elasticity of the stock will hold it in its place. Grafting-wax is then wrapped around the stock, entirely covering the wound. When the stock is an inch or more in diameter, two cions may be inserted, one on each side—the operator being careful to place the external surface of the wood, not bark, of both cions and stock



FIG. 10.

cuttings), which fills up any small interstices that may exist between the stock and cion, allowing a communication between. Wood of one season's growth is preferable for cions to older (except in rare instances), and it should always be firm and fully

exactly even; at least they should meet at some one point; and to make sure of this, the grafts are set inclining inward, as shown in fig 7—*a*, the upper portion of the cion; *b*, the lower end. The cion may be two or three inches long, containing one or more buds. Fig. 8 shows a cross section of the stock and cion inserted. The bark on the cion, as will be observed, is much thinner than that on the stock; but this is of no consequence, provided the edges of the wood are even.

SIDE GRAFTING.

One form of this method is only a modification of cleft grafting—instead of splitting the stock, the bark is divided from the top of the stock downward for an inch or two, and then lifted slightly, as in budding; the cion is pared thinly on one side, and then inserted under the bark of the stock (fig. 9), as it is necessary that the bark of the stock should be separated from the wood. It is evident that this method of grafting must be deferred until

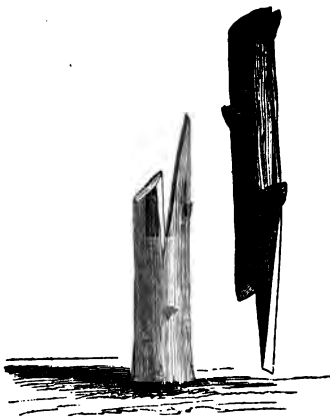


FIG. 13.

the sap starts in spring. Another method of side grafting is shown in fig. 10. The cleft in the stock is a triangular incision, cut with an implement made expressly for that purpose—(fig. 11). The lower end of the cion is made to fit the incision, and

then carefully fastened in its place with strips of waxed cloth.

SADDLE GRAFTING.

Saddle grafting is seldom practiced, except upon small stocks or upon the terminal shoots of young trees. The stock and



FIG. 14.



FIG. 15.

cion should be nearly of the same size, although the stock may be a little larger, without making any material difference in the result; the two sides of the stock are cut off in a sloping direction, forming a wedge, as shown in fig. 12; the lower end of the cion is split, and the sides trimmed away so that they shall fit upon the stock. Young apple and pear trees of three or four feet in height are often grafted in this manner. If the stock is larger than the cion, it is only necessary to have the cion fit one side, the same as in cleft grafting, afterward inclosing the exposed surface of wood with wax.

Sometimes the saddle graft is so modified that it is intermediate between the cleft and saddle, as shown in fig. 13.

Another form of saddle grafting, introduced by Mr. Thomas A. Knight, of Eng-

land, in 1811, is shown in fig. 14. Mr. Knight says: "That is never attempted until the usual season of grafting is passed, and till the bark is readily detached from the alburnum. The head of the stock is taken off by a single stroke of the knife obliquely." The cion should not exceed in diameter half that of the stock; is then divided longitudinally, about two inches upward from its lower end, into two unequal divisions. The stronger division of the cion is then to be pared thin at its lower extremity, and introduced, as in crown grafting, between the bark and wood of the stock, and the more slender division is fitted to the stock upon the opposite side. The cion consequently stands astride the stock, to which it attaches itself firmly upon each side, as in the other modes of saddle grafting.

SPLICE AND TONGUE GRAFTING.

When the stock and cion are nearly of the same size, splice grafting is the most convenient and certain method known. The stock is cut off with an upward slope, making the exposed wood perfectly smooth; a cion of two to four inches long is cut off with the same slope as the stock, and fitted to it, being careful to have the wood and bark on one side fit exactly.

Tongue grafting differs from the above only in one point, viz., a small cleft or split is made in the stock and cion, about midway on the slope, forming a tongue on both; these are then inserted, one into the other, which will hold the cion firmly in its place. Fig. 15 shows the operation as completed—*c*, the stock; *b*, the cion; *a*, bud on cion—the union being formed by what sometimes is termed a tongued splice.

[TO BE CONTINUED.]

CIDER.

BY W. F. HEINS, PATERSON, N. J.

UNDER this name a variety of mixtures are sold and drank in large quantities—many of which are quite unwholesome, and soon show their ill effects upon the digestive organs. A good and pure article of cider requires but little labor in its manufacture; and if the following directions are heeded, many can enjoy this truly excellent beverage.

The apples are gathered before they are fully mature, and placed in a cool, dark room, upon dry straw, for about a week before use. I then take two thirds tart and one third sweet apples, rejecting carefully any that have appearance of decay; put them in a tub of water, to free them from dirt and impurities; then grind them to pulp. To avoid particles of fruit getting into the juice, a clean, coarse bag is put into the press to receive the pulp. Fill the receiver with pulp, close the bag,

and apply the screw gradually until the juice ceases to run freely. After waiting five minutes, apply strong pressure, and press all out. For barrels, those used for whisky or alcohol answer well, if cleaned thoroughly with boiling water, and while still moist sulphurated by hanging into them a tape dipped in melted sulphur, lighted and allowed to burn out. The tape should be about five inches long, and

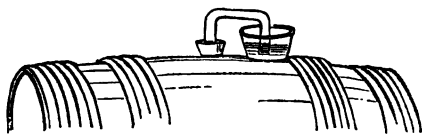


FIG. 16.

attached to the underside of the bung by a wire hook. The barrels should be placed in an airy and cool cellar, on skids,

and are then ready for the reception of the juice as fast as it comes from the press. When full, the holes are closed with corks, in which are inserted glass tubes of an inch in diameter, and of the form shown in fig. 16, made air-tight at their insertion by sealing-wax. A cup, or other vessel, filled with water, is placed under the free end of the tube, which should be covered by the water at least one and a half inches. Fermentation will soon begin, and violently at first. The water in the cup must be replaced as evaporation takes place, and care taken that it never gets below the end of the tube, to prevent air coming in contact with the liquor in the cask. The tubes are not removed from the casks until the bubbling in the water cups entirely ceases, which is not sometimes for many months, or even until spring. I prefer to keep the casks in this condition until that season, when the time for drawing off the cider arrives. The nearly clear liquor is then drawn off—carefully avoiding shaking the casks—into new ones cleansed and sulphurated as before filling the casks full. To have a supply, to keep the barrels continually full to the bung, which is a matter of the first importance, some of the cider is put into small casks, turned over, that the contents may cover the bung, to prevent acidity. During the following autumn, about the end of October, the cider is again drawn off into prepared barrels kept always full, and in the following

spring it is ready for bottling, and will keep for years. I have now some that is three years old, perfectly clear and of excellent quality.

If from any cause the cider should not be clear, draw off the best portion into a clean cask; then dissolve one ounce of Russian isinglass in enough warm water to cover it, and when cold, add to it one pint of the cider; pour all into the cask, and shake thoroughly. In about two weeks the cider will be found clear, and all sediment at the bottom.

The pulp from the press should be put into open vats, the press and bag carefully cleansed, and the water added to the pulp, which may be half its bulk—the whole placed in a warm room, and stirred frequently until it becomes acid; then press the whole and put into vinegar barrels. In a few weeks it will become good and pure vinegar. Gauze put over the vats and bung-holes of the barrels will prevent the entrance of insects. After the vinegar is acid enough, the holes may be closed.

Very valuable discoveries have lately been made by a French savan, L. Pasteur, proving that fermentation in wine is caused by a microscopic plant or fermental particles, which are destroyed by heating the liquid to 100° to 250°.

I shall make careful experiments, according to these discoveries, and report, as we may find a simple process of preserving cider and light wines for many years.

OUR SOUTHERN HORTICULTURAL FRIENDS.—In the address delivered by Hon. Marshall P. Wilder, before the recent meeting of the American Pomological Society, at St. Louis, occurs the following passage, which we most heartily indorse: "Let us hope that our association, whose art is pre-eminently one of the arts of peace, may have a part in this glorious work of thus binding our nation together with indissoluble bonds of brotherhood

and love. Let us trust that, with that skilled, intelligent, and instructed labor, which is indispensable in any branch of horticulture, pomology shall make such progress throughout our country, that soon our meetings may be held in the cities of the South; and that, to them, to add to the fruits of Northern climes, men shall come up, like the searchers of the promised land of old, laden with grapes, and pomegranates, and figs."

WHAT IS THE MATTER WITH THE GRAPES?

SOME ten years ago, the rapid increase of an affection in our choice pears, which caused the fruit to become cracked and spotted, attracted the attention of cultivators to the probable cause of the deterioration. Various and vague were the conjectures which were hazarded by those who do not wish to be found unable to explain any horticultural problem, however abstruse. After some experimental attempts, it was finally admitted, though not without reluctance on the part of some who had committed themselves to certain opinions, that the cracking of the fruit of such varieties as the "White Doyenne" (or Virgalieu) is caused by the attack of a parasitic vegetable growth entering the tissues of the leaf and fruit, and known as a species of fungus. Gradually other maladies, attacking plants and trees, were found to be of the same nature and to belong to the same order of vegetable growth.

Latterly, much has been written and suggested on the subject of the diseases which infest the grape in vineyard culture; but we meet unfortunately with the same vague generalization on this branch of vegetable pathology which was current on the subject of the pear. The object of the writer of this communication is to ask if there is any definite means within the reach of American cultivators to ascertain, with some degree of certainty, whether the opinions respecting the diseases which are so commonly referred to as infesting the

grape, are worthy of the attention of those interested in the matter? It is presumed that this is a legitimate inquiry in a magazine like the old *HORTICULTURIST*, which has done so much in times past to elucidate the difficult points of culture.

Furthermore, it appears to be within the scope of some of the numerous organizations throughout the country, devoted to the promotion of fruit culture, to take note of the want of reliable precise knowledge on the subject of such diseases as the "rot" or "spot" in the grape.

The disease known as "black knot" has, after much discussion and variance of opinion, been accepted by many as a form of parasitic fungus, and an article in the *Journal of Horticulture* speaks of it as such, and describes the identical species to which it is assigned, without any apparent hesitation. We want a similar and equally pronounced statement as regards the "spot," which is so common on the berries of our grapes. If it be a fungus, the mycologist can readily determine the fact. In conclusion, permit me to remark that in view of the great interests embarked in grape culture, it would be worth the attention of the agricultural authorities at Washington to invest a little of the public funds in a good microscope and a machine to make some accurate observations with the same. I hope no unfair insinuations will be offered as to the motives for this suggestion.

"FUNGUS."



AMERICAN WRITINGS GOING ABROAD.—We notice one of our enterprising fruit-growers and nurserymen, F. K. Phoenix, of Illinois, is writing his knowledge to the London *Journal of Horticulture*. The west of the United States is full of horti-

cultural knowledge, and our old-country friends will find the writings of many fruit-growers in the Western States to embody fresh and lively thoughts, although sometimes, perhaps, a little wanting in the making up, by reason of lack of experience.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

PROTECT THE CROWNS OF TREES.—Experience is a good teacher, and it has taught us that the action of severe frosts, followed by rapid thaws on the surface roots and crowns of trees, creates very great injury, often resulting in death. We have known trees healthy on approach of winter, and the same when dug in spring; we have found them with all the top and the lower roots uninjured, but the crown and surface roots entirely blackened and dead. This is often a result with grapevines—in fact, we have seen hundreds of vines exhibit this condition. During the past autumn we have repeatedly urged the earthing up to the crowns of trees and plants, with a view to prevention of this result. We now say, look over your trees carefully, and if you have not turned the earth toward them, thus covering the surface roots and crowns two or three inches deeper than their position during the growing season, you should now do it by a mulch of some sort. In the forest, Nature herself performs this act by the dropping of the leaves; but in the open ground, unless the trees stand in turf, and the fall growth of grass is left, no such protection is had. Surface-rooting plants, such as the quince, Paradise apple, etc., and all newly-planted vines or plants, suffer greater injury, because of the greater number of surface roots than older or stronger rooted plants; but all are affected, and the severity of the winter and number of changes of frost and thaws will tell the result the next season—sometimes in enfeebled growth, sometimes in complete death.

SOIL FOR LILIES.—In the ordinary prepared soils of eight inches deep, for the Japan lilies, the growth of flower stems varies from eighteen inches to two feet in height; but where the ground is prepared some eighteen inches deep, of rich soil and drained, the flower stems rise to four and five feet, and with proportionate increase of flowers. *Lilium auratum* has been grown with stems nine feet high, and having nineteen perfect flowers upon it, some of which have measured one foot in diameter.

FRUIT that, by any oversight or neglect, gets frozen, if kept perfectly dark until the frost is extracted, will be but little injured.

APPLES or pears should be carefully looked over at this season of the year. Take away all specked or rotten ones, and wipe the others with a *flannel* cloth. If possible, dry the inside of the barrel or box before again filling it with fruit.

WINTER PRUNING.—We do not advocate winter pruning, because we think the wound made by the cut at this time more liable to dry, and crack, and open, exposing it to water lodgment, as well as to harden at the edge, more than when performed early in autumn or just as the sap starts in spring. If, however, winter pruning has to be done, the operator should select a time when the temperature, if possible, is above freezing-point, and in the middle of the day, and even then we would never cut away any large or strong limbs at this time.

OHIO STATE HORTICULTURAL SOCIETY.—The annual winter meeting of what has heretofore been known as the Ohio Pomological Society was held at Sandusky the 3d, 4th, and 5th of December, 1867. The show of fruits was not numerous, nor the specimens large, but there were one or two new sorts exhibited, descriptions of which are promised us for a future number. The welcome address was made by D. C. Richmond, Esq., a well-known and successful fruit-grower near Sandusky. In his address, referring to the grape, he estimated the quantity of acres now planted in that vicinity at 3,000, and the product in gallons of wine this year at 250,000. This, in addition to the hundreds of tons of grapes which have been shipped away for table use. We think his estimate of acres below the reality.

The discussion on fruits was taken first on the apple, during which no specially new item of practice or opinion was brought out. Grapes next came up, and were pretty thoroughly handled, so far as the value of varieties may be considered.

The Martha, a comparatively new white grape, Mr. Meehan regarded as being "as fine a grape as he ever tasted." The Mottled was spoken of most favorably by all—Mr. Kelly, of Kelly Island, saying he should plant all he could get of it, as it was a very hardy variety, ripening earlier than the Catawba, and as good for wine, which he regarded as good enough. The Iona got the cold shoulder from nearly all, except Mr. Bateham. The Delaware was spoken favorably of, and especially for rich clay soil.

The Lorain, a new white or amber-colored grape, was shown by Mr. W. Z. N. Barney, and much admired. The bunch of this grape is quite long—eight to ten inches; its berries round or roundish oval, attached by long peduncles; color, a light amber or creamy white; flesh, with a little pulp, with a sprightly pleasant juice, not very rich or sweet, but one that will please the taste of most all, and especially those who

like delicacy. The skin is rather thick, but has no astringency. We believe it has been but little disseminated, but probably it will be sought for by all amateurs as soon as the grower offers it for sale.

The Telegraph or Christine grape was regarded favorably as a variety for early market. Black King, Rentz, and some others, got their just deserts as of no special value.

Cynthiana was reported by Mr. Lewis as having given a must this past season in Mr. Husmann's grounds as high as 119, while the Norton weighed 115, Oeschle scale.

Rogers' No. 1 was reported by one member as having been received from the Agricultural Department garden at Washington, and in fruiting proved a dark red grape—an error, as the true No. 1 is rarely more than an amber pink.

Rogers' 5 was by Mr. Campbell spoken of as one of the best, while Dr. Warder regarded it as second-rate, adding, also, that he did not regard any of the Rogers grapes as at all desirable.

Rogers' 15 was well spoken of—Mr. McKelvey saying that Mr. Bogen, of Cincinnati, an experienced grape-grower and wine-maker, regarded it as the "best wine grape in America."

Rogers' 39 was also well spoken of, and so of 4, 19, 3, 9.

Pears, peaches, etc., had little or nothing said respecting them.

The name of the Society was changed from Pomological to Horticultural, as more likely to interest a greater number of people, and as, perhaps, more consonant in name with the actual doings of the Society. The usual elections, committees, etc., were made, which hereafter we may have occasion to refer to.

MICE.—"A stitch in time" is an old saying; and a careful examination around trees, from time to time, at this season of the year, will often prevent depredations of mice and injury to the trees.

MARÉCHAL NIEL ROSE.—This rose, which commanded so many words of favor last season, and induced many to purchase, is said, by a writer in the London *Journal of Horticulture*, to be, as recorded, a beautiful rose, when the *true* one is obtained; but he says there have been two roses sent out under that name, one of which gives few or no flowers, and is different also in its foliage. We quote:

“Maréchal Niel Rose was raised by a young gardener named Pradel, somewhere in the south of France. M. Eugène Verdier, of Paris, became the possessor of the stock, or original plant. It is said that Pradel sent to M. Verdier two seedlings without distinguishing them. In the belief that both of these plants were of the same kind, propagation was proceeded with from them indiscriminately; hence arose the confusion, for which M. Verdier is responsible, if not to blame. Be it as it may, great annoyance has been felt, and it is but due to the public that some explanation should be offered to clear away the uncertainty at present existing. Should this statement be even an approximation to the truth, it will be quite evident that our nurserymen are quite free from any blame attached to the distribution of the wrong kind. It will also be remembered that the manner in which Maréchal Niel was first sent out was not altogether unobjectionable.

“The pseudo Maréchal Niel may be distinguished from the true one by its habit, foliage, and flowers. The habit is less robust and more straggling; the foliage of a deeper green, resembling that of Isabella Gray; the leaves smaller and more pointed; the flowers are smaller, hard in opening, but when open of a deeper yellow, but in no point so good as the right variety.

THE ELDER AS A HEDGE FOR SCREENS.—The elder, *Sambucus*, is well known, and to describe it would be useless. What we now want to suggest is, that there are

many places where it may be grown and trimmed as a hedge screen plant, and at the same time produce a quantity of flowers and fruit valuable as medicinal or esculent matter. Deep, rich, moist soils suit it best, although winter occasionally kills its strong, coarse shoots when left to itself. We have found that by annual summer pruning we keep it in check, and during the winter only a few of its weak terminal shoots die away. There are several varieties of the elder, and a hedge formed of the varieties when in flower or fruit would be really a beautiful feature to any grounds.

PEARS ON MOUNTAIN ASH.—A Western correspondent writes us that he “has pear trees on mountain ash roots, or stocks, planted since 1848, and that they prove successful.” We have no doubt of the mountain ash proving a good stock for some varieties, and especially is it a good stock for sandy or light soils, where the quince roots do not thrive freely. The objection to the mountain ash is its too great liability to be attacked by the borer *saperda*. We know a number of pear-trees, budded on mountain ash, now planted some twenty years, and they are healthy, apparently, and productive. If we recollect aright, some twenty-five years since the mountain ash was advised as a stock to grow the pear on in light soils by such growers as Manning, Ives, and others.

CUPRESSUS LAWSONIANA OCHROLEUCA.—This is a new variety of the beautiful Lawson cypress, having its foliage completely gilded with golden yellow.

LILACS FOR FORCING.—There are, perhaps, no more satisfactory plants to force and produce abundance of fragrant blooms than the common lilac. Plants may be cut out of the shrubbery, potted, and brought into the house, flowered, and again turned out in early June, without any loss of plant or the group of shrubs, except the item of flowers in spring.

CUTTING FLOWERS IN THE GREEN-HOUSE.—A few days since we were visiting a gentleman who has a fine green-house and conservatory, well stocked with plants in healthy condition, under the charge and owing to the skill of an intelligent gardener. Flowers were in profusion in the hall, drawing and dining room, and in discussing their beauties, and merits, histories, etc., an expression broke out from one of the ladies much after the following: "All these flowers are beautiful, but to me there is more in the pleasure of gathering myself; in being able to cut and pluck my own, when and where I will, than in all their beauty when gathered by the gardener. As it is, we might just as well buy them at a commercial shop as to have a green-house of our own, and yet be at the beck and direction of the gardener." Our reply was: "Madam, we acknowledge the principle of independence as a desirable one to be possessed, but in all relations of life it may be said that we show that principle as much by our regard for it in others as by an absolute demand for its respect in ourselves. In this matter of your gardener, who declines to permit you to cut when and where you please, in your own green-house, let us think one moment of the reasons that induce him to make the restriction of which you complain. Let us remember that you employed this gardener because of his acknowledged skill and knowledge of plant culture; without such reputation you would not have taken him to your service. Now, let us remember that you have placed these plants, from which come the beautiful flowers before us, in his care; that, imbued not only with a knowledge of their habits and wants, but also with almost as much of natural love for each plant as you have for your children, because they owe their life and beauty to his daily care and watchfulness, he must naturally lose all heart, all interest in them, if they are mutilated at the fancy of another. Left to his own guidance and care, to his own pruning, etc., they are also dear

to him, as a proof, to all who visit your house, of his skill and knowledge in culture, while at the same time they redound to your credit as their owner. The pruning away of one limb carelessly will sometimes destroy the beauty of a plant for years, while the destruction of numerous buds, in the gathering of one flower, by careless cutting, would soon reduce the abundance of flowers in your parlors and boudoirs. We have never known a gardener unwilling to cut a flower to please the employer when such flower was pointed out; and we say to you, go, if you please, to your green-house, and point out to your gardener such flowers as you desire, and our word for it, he will cheerfully cut them, unless there is some very special reason, which he will give you, for declining. Arrange the flowers yourself; that part is much more your task than his; and we always give credit to the taste displayed in the arrangement of a bouquet—as much, perhaps, as to the beauty of the flower itself."

SHRUBS UNDER DRIP OF TREES.—It sometimes becomes necessary to plant some shrubs under the shade and drip of trees, in order to make up for the loss of branches, etc. The *Daphne mezereum*, *Mahonia aquifolia*, *Hypericum percinum*, barberries of all sorts, and also privet, are good plants for the purpose. For covering the ground in the summer, in places where the grass fails to succeed, the varieties of vinca, of ribbon grass, *Hypericum hirsutum*, and Irish ivy are among the many good vines and creepers that may be used.

GRAFTING PELARGONIUMS.—"J. H. R., Iroquois." Pelargoniums may readily be grafted. Side grafting is most generally practiced, and the months of February or March are, perhaps, the best time. You can, if desirable, put two or more kinds upon one stock. After grafting, the plants should be kept shaded and in a moist heat until the grafts have partially or wholly united.

STOCKS FOR STANDARD PEARS.—During the past season our attention, in visiting orchards, has been repeatedly called to the varied strength of pear-trees of the same variety growing in the same soil, and, apparently, under the same cultivation. We have no doubt of this being attributable to the stock. Seedlings, of course, are not all alike in vigor, and as the use of a strong or weak stock has influence on the future tree, we suggest to propagators more care in selecting their stocks for certain varieties—in putting the weakest-growing named sorts on the strongest stocks, and the reverse. Again we will say that some years since we used the Buffum and the Pound pear grafted on pieces of roots as stocks, and found them very successful—our before weak-growing varieties, when worked on these stocks, making fine growths. It is a cheap way of getting stocks, as the root grafts are fit to bud in August the first season.

TURFING NEW GROUNDS.—When turf is to be laid, the ground should be permitted to lay and settle during one or two good rains before the turf is put on, otherwise it will settle unevenly and the turf be full of holes. After the ground has become well settled, rake it over anew, and level again; then roll, and again rake as you lay the turf. Laying the turf irregularly, or rather with intervening spaces of one to two inches wide, and filling with soil, then seeding with grass seed, and rolling all down together, is now practiced pretty generally, and with great success in its results. No beating is given to the sod—the roller doing all the pressure needed to form a good surface.

HOT-BED HEATING MATERIAL.—In looking forward for material to form hot-beds as the spring approaches, do not forget the great value of leaves. When possible so to do, have leaves used as litter in the stable, and the manure mingled with them, all saved in a pile by itself. The wetting

of the leaves will soon create fermentation, but so gentle that unless the pile be tramped, we have never known it to burn. Leaves induce a more gentle, regular heat than almost any other material, and retain or continue it longer; besides, we have never had any undue dampness in our frames when a large proportion of our heating came from leaves.

GRIMES' GOLDEN PIPPIN APPLE.—We remind our readers that this is one of the best of winter sorts—a hardy tree, regular annual bearer, good-sized fruit, and high flavor; as good as Rhode Island Greening for cooking, and better for table.

TWELVE GOOD ROSES.—"J. D.," the following list combines colors, vigor of growth, etc., that can but please almost any rose fancier: General Jacqueminot, scarlet crimson; Baron Prevost, rose; Madame Louise Carique, rosy crimson; Gloire de Dijon, orange yellow; Sir J. Paxton, cherry crimson; Celine Forestier, yellow; Jules Margottin, bright crimson; Anna Alexeiff, rose; Duc de Cazes, dark crimson; Duchesse de Medina Coeli, rich purplish crimson; William Griffith, salmon rose, and Maurice Bernardin, vermilion.

WALKS and roads, in the formation of new places, should be just as few as possible, and meet the daily wants of the occupants of house and grounds. Sidewalks and roads, or bold gravel paths, without any definite objects, are objectionable, because the gravel in itself is no attraction, and is only tolerated on account of its utility. In forming a grade, or laying paths among a shrubbery, give the grade such a shape and arrange the paths so as to show as little as possible from the windows of the house.

WHEN the sun shines out clear, very little fire heat should be kept in green-houses, and if the weather will allow, give air carefully.

EARLY CHICKENS.—Hatch all the chickens possible in March and April; they will rear with less attention than those hatched later in the season, and will also form larger and stronger birds. There is an old housewife saying that is pretty true:

"Chicks that be hatched
When there's making of hay,
Will never do well,
But will fade away."

PLANTING VINES DEEP.—There are many, even among our best vine-growers, who advocate planting the vine deep—say eight and ten inches of soil above the upper root. Now it is well known that the most of grape roots, when left to themselves, are grown near the surface, and that one of the great objections to vine-growing, without pruning in a border, is that the roots, if not walled in, will soon extend beyond a desired limit, and that walling, to prevent their extension, causes them to seek food below the genial influence of light and air, and thus create disease. If this prove true, as record makes it in the border, why is it that compelling the roots in the field to seek their food deep below light and air can prove a healthy feature in grape culture? We hope some grape man will tell us wherein lies the value of keeping grape roots below the influence of atmosphere, for in all other fruits all growers advocate the reverse.

HARDY PERPETUAL WHITE ROSES.—The following are reported among the best of hardy white perpetuals: Madame Rivers, Madame Alfred de Rougemont, Madame Vidot, Baronne de Maynard, and Madame Freeman.

CRACKING OF PEARS.—A correspondent of the London *Journal of Horticulture* attributes the cracking of pears to want of moisture. He says: "A dry soil and hot sun combined, scorch, dry, harden the tender skin of the fruits; as soon as rain falls the fruit swells, and the dry skin splits in every direction. The rain only develops

the mischief which the dry soil and sun have effected." This is but another item in favor of mulching, or a constant stirring of the soil, for the keeping up of a steady, even, moist, and cool condition of the soil.

ROSES ON THE MANETTI, OR ON THEIR OWN ROOTS.—All practical growers concede that better blooms, and more of them, together with stronger growth, can be had from roses grown on manetti roots, than when upon their own. But amateur growers, and those who give little special attention daily to the rose, often lose the entire plant by reason of a sucker from the manetti taking the strength from the bud, or really valuable plant, and such persons should always order their roses only on their own roots. Gardeners, however, and the careful rose-grower, should always have their plants worked on manetti.

PELARGONIUMS—TRI-COLOR, BRONZE, ETC.—Early in January the plants should be re-potted. Give them a cool position and but little water until they have become again well rooted. Gradually bring up the temperature in February, and in March let them be placed where they will grow vigorously, being supplied more liberally with water. As soon as they have made shoots, three to five leaves, cuttings may be made.

VARIEGATED EDGINGS.—A very pretty edging to a bed of dahlias we saw this last season, formed of the plain and variegated-leaved periwinkles. It was kept clipped about eight inches wide, and was very effective.

AMERICAN CHERRIES ABROAD.—We notice in the London *Floral World*, under the head of selection of cherries for orchard planting, the editor names three of the varieties originated by Professor Kirtland, of Ohio, viz., Early Prolific, Mammoth, and Tecumseh. The first and last are good, but the Mammoth has, so far as we have known, proved a poor bearer, and hence unworthy.

CELLARS.—Too little thought is given to the care of cellars during winter. Vegetables are often allowed to decay, and, ere the owner knows, some sickness occurs in his family, to him unexplainable, but it may be caused from decaying vegetables in his cellar. The fetid air from such decay is just as bad as the malaria from a swamp, and it should be the care of every one to frequently look over the vegetables in his cellar, and remove all that are in a state of decay, give air, and endeavor to keep the cellar dry and cool.

INSIDE PROTECTION FOR HOT-BED FRAMES.—All gardeners make use of some covering over the glass as a protection to plants during cold nights and days in spring. We have to suggest the nailing of a strip along the sides inside the frame, about four inches below the glass, on which to lay a sash made of one-by-two-inch strips, and covered with oiled canvas. We think it would protect perfectly from frost, and, if obliged to be left on all day, would give a shade to the plants. It is on the principle of the double-sash, but more economical.

SALT FOR ASPARAGUS.—We have no doubt of the value of salt for asparagus, but it may be overdone. The best way is to sow a little at a time, and frequently, say from the 1st of March once in two weeks, until June or July. This will be somewhat after nature's dressing by the salt waves and spray on the sea-shore, where it is a native, as each rain will tend to dissolve the sowing.

INQUIRIES.—Some of our correspondents complain that if they write for us, they are afterward annoyed by inquiries from our readers. We desire to say to our readers that if they will address their inquiries to us, we will try and have them answered.

THE DELAWARE GRAPE is reported as fruiting finely in Canada West.

GRAFTING GRAPES.—Grapes may be grafted during winter, and laid away in sand just as for apple or pear. Use pieces of roots about four inches long; practice whip or tongue grafting as the mode; have two eyes to each cutting or graft, placing one very near the base of the graft when set, and the other so as to come even with the surface when planted out in spring. It is a good way to make sure of any new variety.

IOWA HORTICULTURAL SOCIETY.—We notice this Society has issued a call for a meeting to be held early in January. Iowa is fast growing to be a fruit State, as the exhibit of its products the past year show; and we hope this meeting will be well attended by every Western fruit-grower who possibly can. One hundred dollars in premiums are offered, as follows:

"Best and largest collection of apples, not less than four of each sort.....	\$25 00
Second best.....	15 00
Third best.....	10 00
Best single variety of winter cooking apples..	5 00
Best single variety of winter eating apples....	5 00
Best collection of winter pears.....	10 00
Best single variety of winter pears.....	5 00
Best collection of grapes, not less than three clusters of each variety.....	15 00
Second best collection.....	5 00
Best single variety, not less than three clusters.....	5 00

"Committees to be appointed at the time. All members, and those who will then become such, are cordially invited to bring their best fruits, and compete for premiums.

"W. W. BEEBE, Dubuque, Secretary."

We shall be pleased to receive an account of the doings of the meeting.

IN PRUNING apple or pear trees, be careful always to cut away all shoots of last year's growth that appear shriveled, or have not really and perfectly ripened their wood.

SHRUBBERIES should have a top dressing yearly of well-decayed manure, or, better still, old leaf mold or virgin soil from the woods or forest, where such is accessible. There is no better time to do this than some fine open day in the winter.

TOO MANY CLASSES OF PLANTS.—It is quite a too common failing with amateurs to gather into one house too many classes of plants, without thought of the natural habit and periods of growth they seek to group together, and to grow successfully plants from the tropics and from alpine regions. The result, as a rule, is, that one or the other must and does suffer. There is a variety sufficient to fill any one house, which have alike natural orders and temperatures of growth, and it is advisable always to confine the collection to them.

BUYING GRAPEVINES.—In buying grapevines, make sure, if possible, of one thing, viz., that you buy a vine which fully and perfectly ripened its wood at the close of the season's growth. If the wood of a vine, by reason of late growth, does not ripen, the roots can not. The vine, if not removed, will probably grow the following season; but if taken up and exposed to the air in transplanting, nine times out of ten it will either die outright, or make so feeble a growth as to be of no value. We have tried this to our satisfaction.

DISBUDDING POTATOES.—A friend of ours has a strong belief in good seed, of whatever kind, and of the profit of good, sensible cultivation. Accordingly, he plants whole potatoes, and all of a full medium size, designed, as he says, to supply well-ripened seed—he holding that the extra overgrown tubes, as well as the small ones, are imperfect. As they grow, at the time the tops are four or five inches high, he goes over them, taking away from each hill all but one strong vigorous shoot. Our friend grows good potatoes.

WORK FOR BAD WEATHER.—It is well always to suit the work to the weather. Few can endure to work out in rain or snow, and, if thought be given, there can always be found plenty to do inside, when it is unpleasant or stormy out of doors—

work also that will save many an hour when the hurry and drive of spring comes; preparing label sticks and stakes, mending lights, making boxes for melons, etc., cleaning crocks, painting tools, and a thousand other things, which, if done, will often help a man to drive his work, instead of the work driving him.

GERANIUMS.—It is not a good plan to wet the roots of geraniums taken up and hung in a dark cellar for winter's keeping. About the middle of March, if they are cut back pretty closely, root and branch, and potted in a light, sharp, sandy loam, and, for want of a frame, placed in the window of the living-room, and given but little water, they will start and make nice plants for out-door planting in May.

IN THE GREEN-HOUSE.—It is policy to look over the plants regularly, to see that none are in want of water; and when giving water, be careful that it is tepid warm. On clear, sunny days, when the sun carries the temperature up above 60°, we like to give air, but always close the ventilator in time to retain for the night as much of solar heat as possible. It is better for the plants, besides being economical. All the cacti should be kept in the warmest and driest part of the house. If the green fly get numerous, fumigate, or if only on a few plants, dust with snuff. It is a good time to prune now, while plants are comparatively dormant.

ROOT PRUNING GRAPEVINES.—We have, during the past year, made some comments respecting the advantage of root pruning grapevines, much as pears are done, with a view to check redundancy of growth. We hope some of our readers will try it.

A FOUR-LEGGED FOWL.—At an exhibition of poultry in Lancashire, England, the past autumn, a hen was shown with four legs—three of which were used for locomotion.

BEDDING ANNUALS.—The collection of annual flowers now embraces some of the most beautiful in form and color, and many people, in their novelty and the cheapness with which the seeds are now obtained, prefer to grow them rather than risk the loss and chances of plants transported by express companies, often received in bad order, and again with some of the very choicest stolen out of the case. No redemption for losses is ever made, except by suit—the plea always being, “It was not lost on our end of the line,” and the receiver prefers to pocket his loss rather than hunt the matter up and sue a company at a hundred or more miles distant from home. Therefore it is that annuals will continue to be grown, and especially by all who are not located near a commercial green-house. With those, however, who can command bedding plants within a reasonable distance, there is no fear of annuals ever taking their place. But, as we have said, annuals now embrace beauty in form and color, and, besides, they bloom freely, when many of our bedding-out plants have exhausted themselves of their early first blooms, and are comparatively quiet thereto; therefore annuals are, besides their cheapness of procuring, desirable to have, even among large collections, and within reach of commercial gardens. The great error, however, with most who grow them, is that, as a rule, they are so distributed in the grounds as to produce little or no effect. Scattered here and there, scarcely within speaking distance, are little clusters of annual blooms, leaving the balance of the bed or border, or supplied with some variety that, recommended by the seedsman, has novelty, but no bloom or beauty in its composition. Massing of annuals is essential to an appreciation of their beauty, and especially should the growers confine themselves to those well known as free growers and bloomers. Plant no new variety as a mass plant, or for conspicuousness of bloom, on trust of the handbill or circular advertising it. Place every such

novelty one year in the reserve or back border. Use such annuals as you know to be good bloomers in August and September, freely among such of the bedding-out plants as at that time fail comparatively in giving abundantly of blossoms. Take no estimates for your guide of the heights of plants, as published, unless you know in what soil and under what kind of treatment they were grown. For filling large beds or borders, in positions of second-rate importance, we would use freely of annuals, but always intermingled with bedding-out plants of a like habit in growth or flower to make up the flower bouquet of arrangement as a whole when in bloom, and especially would we study foliage, that our bed or border should in its green lines always present shades and heights to please the eye of taste.

GARDEN SOIL will always pay for trenching deep, even if done with the spade; but remember to keep all the time the good or surface soil at the top, and not bury it at the bottom, as we have seen done by some gardeners. If the expense of trenching the whole garden this year be too much for the purse, then select one portion for this season's improvement, and another for next year. Clay soils are especially benefited by trenching, and while such soils are not specially adapted to early crops, the trenching will be found a great aid in the aeration it gives toward earliness, and for a dry, hot summer a clay soil trenched is superior to any of lighter texture.

NEW SEEDLING PEARS.—At the exhibition of the Pomological Congress of France, in September last, M. Grégoire-Nelis exhibited one hundred and twenty unnamed seedling pears and forty-eight new-named varieties. The unnamed seedlings are spoken of by the *London Journal of Horticulture* as “having nothing attractive among them,” while the named ones are recorded as a list without description.

AGRICULTURAL ILLUSTRATIONS.—In the whole range of agricultural and horticultural esthetics we candidly think nothing has a more pleasing and permanent effect than illustrations. It is almost as good to look upon the picture of a lovely fruit or handsome tree as to behold the object itself in natural reality.

In the management of the various agricultural and horticultural journals of the day, the editors have appreciated the value of illustrations in intensifying the effect of their literary matter, and money is freely spent in the production of anything of this nature possessing interest and attraction.

An agricultural paper which from beginning to end is plain, bare, unadorned with some little cut of beauty or use, is like a pasture drear and forlorn. But just throw in a beautiful engraving of a fine fruit, or a sketch of a flower, or enliven its pages with the drawing of a house, and behold the interest which the reader immediately takes! How eagerly he catches the paper and looks on the picture with admiration! From picture he turns to explanation, and lo! how indelibly the remembrance is stamped on his mind and memory!

Hence it is that we see agricultural papers using illustrations more and more frequently. A description of a new fruit is too often as dull as a dark, cloudy day, unless a sketch is given to throw it out into a full and tangible relief.

A new shrub may be enthusiastically noticed, but its effect is greatly increased if the picture of its form and appearance accompanies it.

There are a few publications of the present day which are especially noteworthy for the admirable display of this most agreeable entertainment to readers.

With what a peculiar pleasure does the possessor of a set of *THE HORTICULTURIST* take each volume carefully down from the wide library shelf and glance over the pages, rich with horticultural lore, and fraught with so many delightful memories of Downing, its founder, and of the various

editors and contributors it has so well and prominently possessed! His eyes first turn to the goodly illustrations, which come thickly thronging along. Now it is a shrub; now it is a cottage; now a fruit; now a view of some suburban villa; and, as he approaches a still later date, they become more and more frequent, and of a more elaborate and tasteful execution.

Since its possession by the Messrs. Woodward, large sums of money have been liberally spent in the production of engravings of the most tasteful nature, and no stint is made as to number or excellence. What has been the result? A love of horticulture has been fostered and stimulated from year to year, to better and better results; a desire for more tasteful cottage building has been kept up, and designs have followed one after another in quick succession, and found a ready adoption. Country Homes and Rural Art, the collection of many of these designs, are the most popular architectural books in the country, and together have reached sales of over 10,000; while regular editions are still constantly issued without any flagging of the popular interest.—*N. Y. Independent.*

THREE HUNDRED AND FIFTY VARIETIES OF PEARS.—At the meeting of the Pomological Congress in France, September 19, 1867, one exhibitor had upon the tables three hundred and fifty varieties, or, rather, dishes, of pears—some fifteen or more of them being pronounced synonyms of others.

PITS should be watched, and air given when the weather will admit, in order to prevent damp and mold.

A WORD ABOUT THE LAWN.—There is always beauty and repose in a well-kept closely-shaven lawn; but a lawn with scattering tufts of weeds or foul grasses, and the grass from six to eight inches high, presents no idea of refinement, but, to use a common vulgar phrase, looks as if the owner "wanted to be somebody, but could not

afford it." It is better, therefore, for your own eye, as well as for your credit in the judgment of the world, to have a small lawn, and have it kept in perfect order, than to have an acre or more loosely managed. If there are beds of flowers in a well-kept lawn, they can be visited at any time, without fear of disturbing the polish on boots or wetting the kid of the most delicate slipper; but if it be badly cared for, woe to the boot or shoe less than a "stogy" that ventures upon it any hour before ten A.M. or after four P.M.

A well-kept lawn is an expensive feature—expensive in its first cost, if well prepared, and in its after-keeping. If, therefore, you are about to plan your grounds, do so with a knowledge of your means for keeping them, and take no more into the lawn than you well know you can keep as it should be.

POULTRY.—We notice that the poultry fever is again rising, and we rejoice at it. Few appreciate the great amount of food produced by the keeping and raising of poultry. Eggs and chickens are almost a necessity in sickness, and always good to take in health. At this time the popular tone seems to run between Brahmas and Dorkings as the two leading breeds. The latter have stood the test of years under all conditions, and certainly are a breed combining, perhaps, as many, if not more, good qualities as any other. Brahmas for town gardens are desirable, as in winter they are good layers, and they do not ramble, or seem to desire to do so, as much as some other breeds. To any one who desires fowls for their eggs alone, the Bolton Greys we regard as one of the most valuable breeds—equally as good layers as the Poland, and much more hardy. As a fancy bird, glossily beautiful, the Black Spanish are unsurpassed.

We have bred at times nearly every variety, and our experience is in favor of the Colored Dorkings as a one pure breed; but we regard the cross of Brahmas with

the Dorking cock as producing the hardiest, healthiest, best formed, and best layers of all. The cross, however, must be maintained each year, breeding only from the pure Brahma hen and Dorking cock.

BOOK NOTICES.

HYATT'S HAND-BOOK OF GRAPE CULTURE; or, Why, Where, When, and How to Plant and Cultivate a Vineyard, Manufacture Wines, etc. Especially adapted to the State of California. By T. Hart Hyatt. H. H. Bancroft & Co., San Francisco, Cal. 12mo, 279 pp.

Books devoted to grape culture are still in fashion. The Eastern States have been pretty well supplied with the home-made article in the past half dozen years, and now California comes forward to help complete the list.

California is without doubt one of the very best wine countries known, and Mr. Hyatt's book will be read with interest by every one who has any inclination to go into the business of grape growing.

The volume before us is a very handsome one, of nearly three hundred pages, filled with more or less valuable matter gathered from various sources. There is no doubt but that it will make many of our vineyardists yearn for a California soil and climate, and perhaps some may be tempted to migrate to a land where the grape, it is said, never fails to produce a bountiful crop. We fear, however, that Mr. Hyatt has painted the subject in too brilliant colors, and few will ever realize the result which he promises to those who follow his advice.

We are told that no insect or disease is known to affect the grape in California, consequently they are always sure of a crop. This statement may be true at the present time, but that is no proof that it will always be the case. Other sections of the country have at one time been exempt from such pests, but they are plentiful now, and in many instances the culture of the grape has been abandoned in consequence.

Poultry Department.

CONDUCTED BY A. M. HALSTED.

WITH this number we present to our readers a "*Poultry Department*," believing that in so doing we are meeting the wants of many who, with a few acres, or even a few rods of ground, devoted mainly to horticultural purposes, have still room and time for a few fowls; and as the two work most happily and pleasantly together, we feel confident that the majority of our readers will hail with pleasure this addition to our pages.

We purpose to make these columns valuable to our readers, not only as a record of the "*latest poultry intelligence*," but to give full descriptions of the newest and finest breeds of poultry brought before the public; also of the older and most popular varieties, fully illustrated with cuts taken from life, expressly for our pages. We shall also set aside a limited space for queries and answers. Diseases of the feathered tribe will be discussed, and remedies given. Plans for henneries and yards; feeding and drinking fountains—in fact, everything connected with the keeping and rearing of fowls will be offered in turn to our patrons.

The interest in poultry seems to have taken a fresh start, and the late exhibition of fowls in this city has given it an additional impetus. Gentlemen of means and leisure are eagerly discussing the claims of the different varieties to public favor, and the best method of constructing poultry houses and yards; and in view of the new importance given to these matters, we are especially warranted in allotting some time and space to the interests of the feathered race. We would therefore solicit our readers—those who have devoted any time to rearing fowls, as well as those who are yet novices in such matters, to com-

municate such intelligence as they can; also the result of any experiments; to answer such inquiries as they may be able; to call the attention of their neighbors to the new department, and aid us practically, as well as with their good wishes, in making it a success.

THE EXHIBITION OF THE AMERICAN POULTRY SOCIETY,

which took place in this city on the 8d, 4th, 5th, 6th, and 7th of December, we are assured, was a perfect success. The show of fowls was very large and of unusual excellence—in fact, so far as quality, it was the finest ever held in this country. Of the older and well-known varieties, the Brahmas were the best represented. Some exceedingly fine specimens of Black Spanish, White Leghorn, and Grey Dorkings were shown. And of White Dorkings one coop, entry No. —, seemed *par excellence* the finest there; they were indeed magnificent, and we think, as the owner claimed, the best on this continent. The new French varieties were not largely represented, but made up in quality what they lacked in numbers. One coop of Crevecœurs, splendid birds, marked \$250, were all that any one could desire. In games, the show was large and fine. The Black Breasted Reds were most prominent, and gave the judges some little trouble in making their awards, owing to the unusual excellence of all the specimens shown. Of Derbyas, there was but one entry, which were imported birds. Quite a number of other varieties of games were shown—the Stonewall, White Georgian, and Brown Reds being particularly noticeable. The Bantam family were well represented—some beautiful specimens of Golden and

Silver Sebrights, Black African, and game Bantams being exhibited, as also some White and Nagasaki Bantams. In ducks there was a very fine assortment, and the birds did credit to their breeders and owners. The Aylesburys and Rouens were unusually large and fine, while the Cayugas, Platas, Wood, and Brazilian were well worthy of notice. Some very fine coops of China and African geese, and one superb pair of Embdens, attracted a great deal of attention. In turkeys, the show was small, but we noticed some very fine Bronze and White. The display of pigeons was splendid. Some Roman seemed almost to have outgrown their pigeonhood; and the Pouters, Ruffs, Fantails, and Carriers would bring joy to any pigeon-hearted man.

Had we space, we would publish the awards, but as we can not, we must refer the reader to the Secretary of the Society. (See advertisement in November number.) The past show was regarded by the Association more as an experiment than as a certain success; and although not so successful pecuniarily as it would have been in a more accessible location, still demonstrates that the Society can gather a collection of fowls surpassed by no other section on this continent.

The arrangements were far from perfect; but much allowance must be made, in consideration that this was the first, and that future exhibitions will doubtless profit by the lessons and hints here learned. The room was very poorly lighted; but we are informed that it was the only one procurable at the late day when the Society definitely resolved to have a show. One feature of the arrangements was especially commendable—the entering the coops by numbers instead of in the exhibitor's name. By this rule no coop was allowed to have the exhibitor's name appear on it until after the judges had made their rounds; and if a name appeared, it was ruled out from competition—thus securing an impartial decision, as it was impossible to show

favors, not knowing to whom they would be shown. Taken altogether, it was, as we heard a visitor express himself, "the finest collection of fowls ever brought together on this continent in the poorest room ever used for an exhibition of that kind." There were coops enough to fill a room double the size; and we hope at future shows the room will be better suited therefor. We understand that the Society intend to have semi-yearly exhibitions—spring and fall—and cordially wish them success.

IMPROVED VARIETIES VS. COMMON FOWLS.

Does it ever strike the farmer, or any one who keeps fowls either for profit or pleasure, that there is a great advantage in keeping improved breeds of poultry over the common barnyard fowls? Hardly a farmer but will acknowledge that it costs no more to keep a good cow than a poor one; and that the improved thorough-breds are better than the ordinary cow, and that therefore it is more profitable to keep pure stock than mixed. But how many apply the same reasoning to the poultry yard? The fifty or more fowls on the majority of farms could profitably be replaced by twenty of some improved variety—in fact, twenty pure-bred fowls, well kept and cared for, will produce more eggs in the year, and as many chickens, as one hundred common fowls allowed to run as they please and shift for themselves.

Common fowls will average 50 eggs each per year, while many of the improved breeds will average 150 to 200, and some few varieties 250 to 300.

I do not think any guide can be given as to the number of fowls any one should keep; for while one could profitably keep 100 to 200, another would do far better with 20, or even a less number. My advice would be, only keep as many as you can keep well. I am aware that many think it impossible to keep large numbers of fowls together and have them thrive. This is a mistaken idea, and arises from the fact, that where large yards of fowls are, or

have been kept, they have not received proper care and attention, and have, therefore, ceased to be profitable.

One hundred fowls are not too many for a single yard, and even double that number may be kept, if the same care and attention are given them that would be paid to a dozen or twenty. We are too apt, when we have so many, to provide insufficiently—to be careless about their housing and keeping their quarters clean. It seems but little trouble to care for twenty fowls, and takes only a few minutes to see that they are all safely housed in cold weather; but when one hundred or more have to be cared for, we are very apt to begrudge the labor, thinking "it don't pay to spend so much time on a lot of chickens." We think there is less time and labor spent on poultry than on any other kind of stock; and we do not know of anything that will better repay the care and attention given them. I believe there is double the profit on \$500 invested in poultry (improved varieties) than an equal investment in any other kind of farm stock. At the prices paid for eggs in the New York market the past three or four years, a hen will pay for herself and keeping within the year, and all her progeny is clear gain, over and above the first outlay. We do not mean to say that everything will be paid for, but the first cost of the fowl and her feeding and the care bestowed on her. But in order to secure this result, good fowl houses and yards must be provided, skillful care and treatment given, and improved varieties of fowls kept.

ONIONS AND POULTRY.—Scarcely too much can be said in praise of onions for fowls. They seem to be a preventive and remedy for various diseases to which domestic fowls are liable. Having frequently tested their excellences, we can speak understandingly. For gapes and inflammation of the throat, eyes, and head, onions are almost a specific. We would therefore recommend giving fowls, and especially young chickens, as many as they

will eat, as often as twice or three times a week. They should be finely chopped. A small addition of corn meal is an improvement.—*Genesee Farmer.*

THE HEN AND DUCK AS EGG PRODUCERS.—A paper has been received by the Paris Academy of Science, from M. Comaille, on the comparative value of the hen and duck as egg producers. His observations were limited to three hens and three ducks, all fine animals, hatched at the same time in the month of February. During the following autumn the ducks laid two hundred and twenty-five eggs; they re-commenced laying in February, and continued to do so until the middle of August. The hens laid no eggs during the autumn, but began in January, and left off about the middle of August. The totals of each at the end of that time were: the hens, two hundred and fifty-seven eggs; the ducks, six hundred and seventeen. M. Comaille next examined the nutritive value of each kind of egg, and found them nearly equal in that respect.

VALUE OF POULTRY MANURE.—There is no manure made on a farm so valuable as that of poultry. One ounce of it properly diffused in a half pound of soil, and placed in a hill of corn when planted, will be as powerful a fertilizer as ten times its weight in barnyard manure. A foreign writer says: In France, as well as in our own country, most eminent chemists have proved, by analysis, that poultry manure is a most valuable fertilizer, and yet, for want of proper system in housing poultry, it has not been rendered available to rural economy. The celebrated Vanquelin says that when the value of manures is considered in relation to the amount of azote they contain, the poultry manure is one of the most active stimulants; and when, as a means of comparison, the following manures are taken in parts of 1,000, it will be found that—

Horse manure contains.....	4.0	parts of azote.
Guano, as imported.....	40.7	do. do.
Guano, sifted of vegetables, etc....	53.9	do. do.
Poultry manure.....	83.0	do. do.

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HORTICULTURIST.

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LANDSCAPE, OR HOME ADORNMENT—EUCLID AVENUE, CLEVELAND, O.

BY F. R. ELLIOTT.

THE value of everything that approaches the beautiful is enhanced by an appropriate setting. Even the most beautiful flower of nature is improved by its surrounding of delicately tinted green foliage. The artist when exhibiting his most perfect artificial representation of nature, places it, if possible, with a surrounding which will measurably attract the eye, and yet cast upon the picture an enhanced breadth, and height of coloring combined with the softness which nature in her hazy moods gives to all her productions. Woman, in all her beauty, is rendered even more attractive in a setting of appropriate colors and forms of dress; and woe be to the taste of a blonde who, robing herself in light blue, seeks to decorate for relief with coral ornaments! The opaque red, to use a common phrase, would be "dreadful;" while the use of a pale pink would light up and dispel the pallid moonshine of the blue, and give to all a rich pearly, hazy, rosy hue, as of early morn.

These lights and shades being well understood in our artificial "rôle," it would appear that in the more permanent matters of life, such as the decorations of our daily

homes, they should have control; yet we too frequently find a mansion residence constructed after the best taste and truest principles of architecture with its surrounding fitting, as inappropriate as a bright yellow would be for a lady's walking dress.

The beauty of landscape or home adornments that surround and decorate many of the residences on Euclid Avenue, Cleveland, O., has become proverbial, and a commonplace record of all traveling letter-writers. I may therefore be pardoned if, in a few words relative to the subject, I present views taken from some places there as illustrative measurably of what may be created by the use of judicious taste and a knowledge appreciative of the natural habit in growth, form, and colors of trees and shrubs.

"Turf and trees are the cheapest, most lasting, and most permanently and manageably enjoyable of all the essential elements of an elegant garden, and should have the first thought, whether in making or improving one." That I do not proscribe flowers, none need be informed; but, as a rule, they should be subservient to the

general scheme, just as colored decorations within the house are. "Window curtains we must have, but we do not cover our walls, pictures, and looking-glasses with them; and flowers we must have, but in their proper proportion to all the rest of the essentials of a garden. In the foreground of a lawn, a few bold flower-beds are usually appropriate and desirable, and if well furnished, enhance the brightness of the turf, warm up the lovely shadows of the trees, and actually increase the apparent space set apart for pleasure. But when beds are dotted everywhere, when a scheme of a geometric kind is obtruded of far too great an extent for the place, the boundaries contract upon it, the sense of

freedom is gone, quiet appears to be banished from the scene, for colors are exciting—sometimes distracting, and quite antagonistic to the enjoyment of quiet and rest."

From every dwelling-house situate within its own grounds, one set of windows should look upon greenness, and this view should extend over as great a space as possible, consistent with the dimensions of the property. An inordinate complexity of flower-beds, numerous and close together, tend to confuse the eye, and their mingled colors make an end of harmony and contrast; while, again, a long bed or border on the promenade system becomes monotonous from its continuity and want



FIG. 17.—*Group on the Bed and Border System.*

of relief obtained when the same plants are arranged in bed and border combined. Fig. 17 is a tolerably good representation of a group on the bed and border system, and placed at a gentle curve in the footpath. In a short article, like the present, it is of course impossible to more than touch upon some of the leading features which are requisite to the making up of an effective setting for the mansion. Not only must a knowledge of tree and plant be possessed by the decorator—not only must he understand the principles and effects of light and shade—not only must he have regard to the architectural character of the building as the point to which his setting is to become fitting, but he must also have

regard somewhat to the composition of neighborhood surroundings, especially when treating the grounds of a suburban villa residence of only a few acres; and finally, nothing can be done satisfactorily effective without taste.

Fashion, without "rhyme or reason," as in other matters, occasionally sways in landscape decoration, and the use of some particular class of trees becomes so common, and often so inappropriately placed, as to detract much from their real merits. The use of weeping trees may especially be classed as an instance, within the past few years, of the force of fashion; for while they are often in themselves of great beauty, their free use in all places and

positions soon creates a distaste therefor. As single lawn trees, standing out by themselves, they must be used sparingly; but where they can be planted on a margin of a stream, or in some way connected with water, they can be used more freely. The accompanying drawing — fig. 18 — presents the grounds of a place laid out by the writer in 1851, and then the property of John Shelly, Esq., now of Mr. Scowden, on Euclid Avenue. The house fronts the south, and on the lawn can be seen a very

fine weeping tree, at the right; in the foreground is a group of Norways, that, when planted, were for the purpose of breaking an outside unsightly feature. North and west of the lawn, evergreens prevail as a background feature, and for the purpose of a screen from cold winds. Directly in front of the steps, at the turn of the pathways, are beds of plants: the one at the right having in it an African tamarisk, with its base and branches intermingled with English yew. A group of shrubs

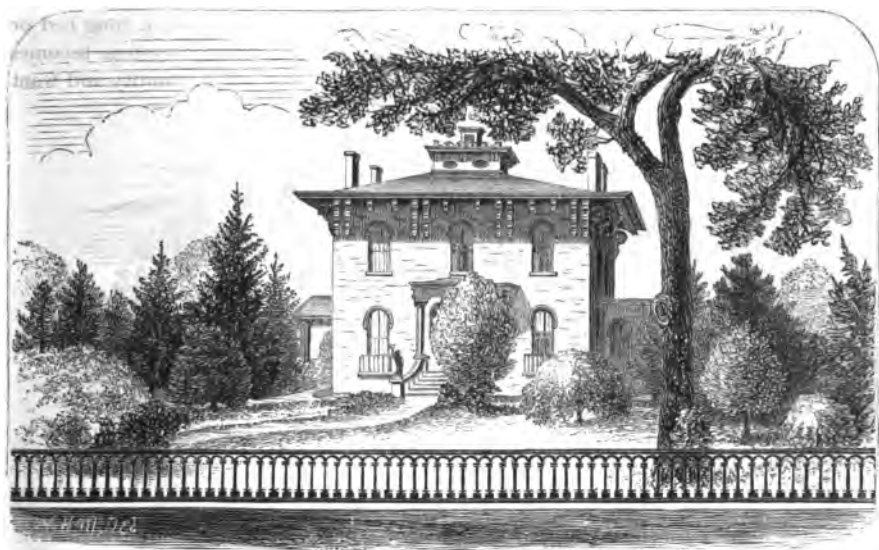


FIG. 18.—*Grounds of Mr. Scowden, on Euclid Avenue.*

breaks, at a curve in the path, the too great prominence of the entrance gate, leaving the balance in lawn so graded as to give appearance of breadth beyond reality.

As an instance of what may be done, more by raising and shaping the ground than by much planting, is seen in fig. 19. It presents the present appearance of the residence of Colonel George B. Senter, a gentleman well and favorably known all over the country, but more as a poli-

tician and man of general enterprise than as connected with horticulture. This place, ere it was refitted, was deemed gloomy, damp, and unattractive; the ground was on a level with the street; trees were overabundant, and placed without reference to form or effect. In the construction of the house regular lines prevail, and the steps leading to the front portico or colonnade are unavailable in use because of the entrance door being placed at the side. In working up this place the ground was

raised, so as to get the grade considerably above the street. The entrance footpath was placed directly in front, midway, and carried straight as far as possible, in order to keep a balance and harmonize with the straight lines of the building; a group of low evergreen shrubs breaks the turn of the pathway to the side entrance, and at the same time the ground is there raised above the surrounding grades. The appearance of the place is now deemed quite satisfactory.

Fig. 20 presents a partial view of the house and grounds of Joseph Perkins, Esq., a gentleman of great taste and love of the beautiful and good, whether in art or nature. This place has been mainly the creation of its owner's brain in arrangement, and contains more rare and elegant trees and plants than any other one in the Western States. The house was designed by Upjohn—is of cut stone, plain, but massive and symmetrical. The lawn is of considerable breadth, and in its first

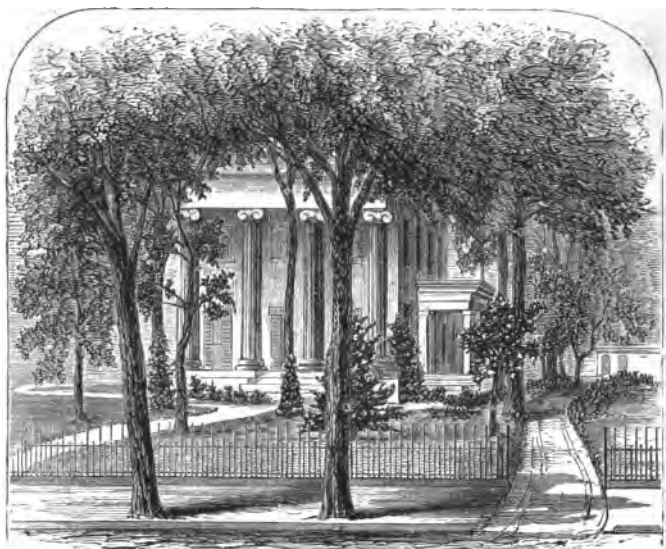


FIG. 19.—*Residence of Colonel George B. Senter.*

planting an attempt was made to screen it partly from the street view, by a planting of shrubs, which from the planter's not then knowing well the habit and growth of the various plants has proved in effect rather a failure. This desire to screen and make the lawns partially private is a feature in planting that should be more practiced. The tendency is too much toward creation of scenic effect for the million rather than the use of one's own family and friends' enjoyment.

A bed, near one of the front entrance gates, of low trailing evergreens, several magnificent shaped magnolias, a bed of rhododendrons and azaleas, a mass of mahonias, and a hedge of hemlocks are among the features of attraction and beauty that adorn this gentleman's home. Upon one side of the house a small greenhouse is constructed, while on the opposite side the flower-garden proper is laid out, and during the summer season is a mass of blooms from the opening of the early

crocus, or snowdrop, to the late chrysanthemum, which with its brilliancy of color in flower seems to defy the blasts and cold of winter. Upon Mr. Perkins' grounds

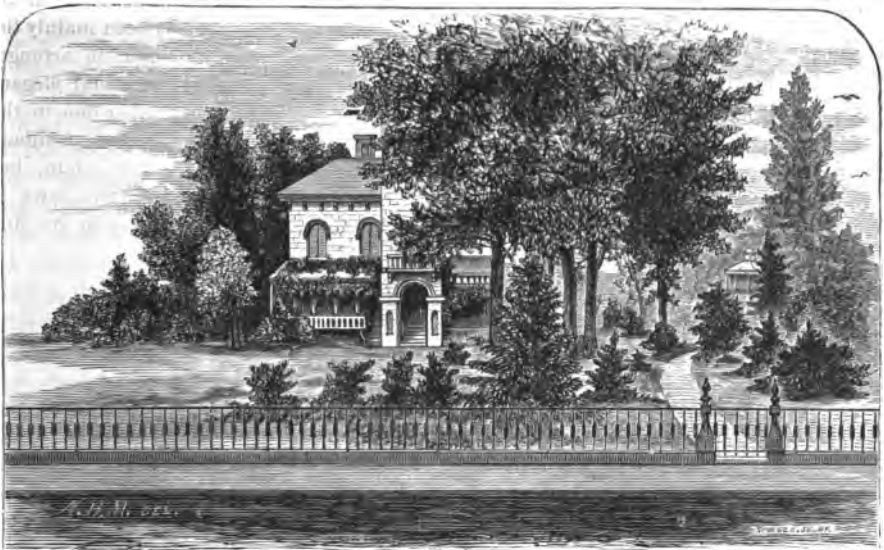


FIG. 20.—*House and Grounds of Joseph Perkins, Esq.*

there is also a feature of rock-work rare to be seen, which with other items of landscape beauty I will reserve for a future article.

MARKET GRAPES, ETC.—G. F. R., TOMS RIVER, N. J.—“We are just below latitude 40°—some miles back from the ocean, and the soil a sandy loan, with considerable clay and gravel stones, and high and rolling; would it be safe to plant the Catawba? and what varieties would you recommend for market? and at what distance apart? and would you advise spur pruning or the annual renewal?”

We should plant for market purposes the Telegraph, moderately, because while we have no doubt of its profitableness as an early market sort, it yet has not been grown over a sufficient extent of country to advise its planting largely. Next, we would plant largely, very largely, of Rogers' No. 4, because it is hardy, a good bearer and grower, and a bunch and berry that will

always command a ready sale; besides, it hangs well to the bunch and keeps well. Next, we would plant the Catawba; for while it will not, probably, in your soil, make a fine wine, it will color well, and sell in market, and keep well. Plant it on your strongest clay soil—not on light sand, and especially avoid soil with much vegetable matter for it. The Diana, we have no doubt, will prove valuable with you for market. Give it thin, poor soil, and train it long.

We would plant Rogers' No. 4 and Diana in rows eight feet apart, and ten feet each from vine to vine; Catawba and Telegraph eight feet each way. The annual renewal cane system is the simplest mode, and we believe, as a whole, productive of the best results.

ORNAMENTAL GRASSES.

For the purpose of embellishing our homes in winter with elegant and pretty groups or bouquets of dried flowers, there are no class possessing more graceful and

gathering, that many hesitate, and finally leave them until their beauty is lost. After cutting, simply place them on a shelf in a dry, darkish room, where they will be free from dust, and in a few days they will be fit for use. Seeds of many beautiful varieties may be obtained of nearly all seedsmen, and if they are sown in pots some time in March, covering the seeds from an eighth to a sixteenth of an inch deep with fine sandy soil, placing them where they will get the light and heat of the daily sun, but protected from cold winds and frost, say either in a cold pit or on the window-sill inside the house, the seeds will soon vegetate, and by the middle of April or early in May be ready to turn out in the open ground; or the seed of most varieties may be sown in the open ground about the 1st of May.

During the past two seasons we have often examined clumps or masses of ornamental grasses growing in the grounds of



FIG. 21.—*Pampas Grass*.

attractive forms than such as are termed ornamental grasses. They are very easy of cultivation, and the best way is to place them in a bed by themselves, as then they will be cared for, and be more likely to be gathered at the right time than if scattered around in the various beds or borders. For preservation, the only point required is to cut them at the right time, and that is just before they begin to fade and drop their seeds, or, rather, when they are in the full flush and grace of beauty, whether it be summer or autumn. This season of gathering is another reason for placing them in a bed by themselves, as when placed connected with flowers, the loss of beauty to the bed is so great from



FIG. 22.—*Bambusa Gracilis*.

our amateur friends; and recently our friend Jas. F. Hind, Esq., of Nottingham,

wrote us from England, in glowing terms, of the beauty of a clump of Pampas grass which he saw growing on a lawn, and having over one hundred and seventy heads or stems of flowers. The Feather grasses are perhaps among the varieties most grown here. They are delicate, and

always beautiful, and when made up into bouquets, mingle beautifully with the coarser heads of the animated oat. Our friend sends us also a drawing of *Bambusa gracilis*, the stems of which, he writes, were six feet, while another variety, the *nigra*, had stems fifteen feet.

TWO NEW APPLES—CAROLINE AND BUSH'S BEAUTY.

CAROLINE.

This and Bush's Beauty were first shown by D. C. Richmond, Esq. It is said to have originated near Fremont, Ohio. Tree, a strong upright grower and abundant bearer; fruit, medium, globular, slightly flattened; skin, smooth, pale, lemon yellow, with darker suffused dots—slight

brownish blush on sunny side; calyx, rather large, with nearly erect segments; basin, medium depth; stem, slender, projecting just beyond the surface; cavity, deep, sometimes with a knob or irregularity on one side, and slightly russeted; flesh, white, crisp, tender, mild, sub-acid; core, above medium, with large capsules, and

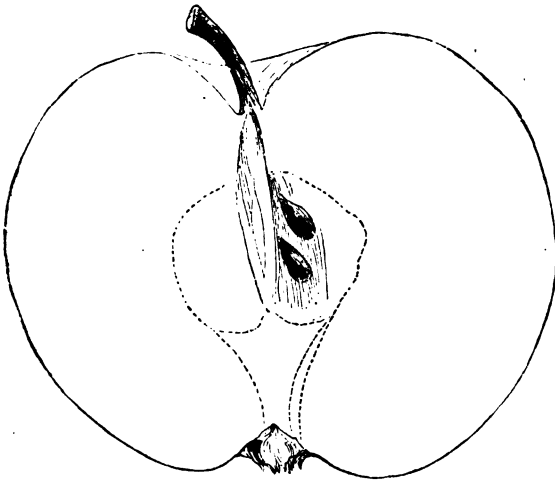


FIG. 23.—*Caroline*.

open in center; seeds, ovate pointed; September; a most delicious amateur fruit.

BUSH'S BEAUTY.

Original tree in the orchard of Captain Henry Bush, near Sandusky, Ohio. Tree,

spreading, with large, coarse foliage, a yearly and abundant bearer; fruit, above medium, rounded, flattened at stem, and surface irregular or corrugated, uneven, glossy; color, a clear creamy, white ground, striped and splashed in the sun exposures with a bright vermilion pink, and a little

of rough russet toward the eye on one side; stem, short; cavity, deep, open, a trace of greenish russet; calyx, closed; basin, deep; somewhat corrugated; core in center of apple, open, and abundantly filled with seeds, four or more in a capsule;

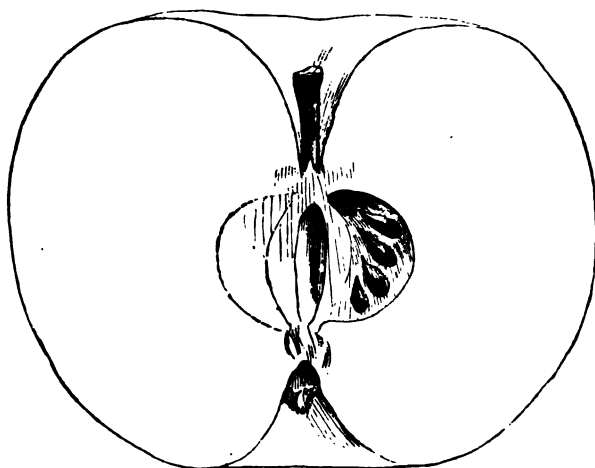


FIG. 24.—*Bush's Beauty*.

flesh, white, crisp, tender, acid; fine for Oldenburgh for eating; season, September cooking, and about equal to Duchess of and October; valuable as a market sort.

HOW TO GROW QUINCES FROM CUTTINGS.

BY HORTICOLA.

FOR pear-stocks, quinces grown from cuttings are in many respects preferable to those grown from stools; although I succeeded well enough in growing them according to Fuller's method, that is, the cuttings taken off in the fall or early winter and preserved in sand or soil till spring, are put with their lower ends two or three inches deep in soil made into mud by the addition of water, in which they are kept two or three weeks before planting.

They seemed to require considerable care after planting, and either copious waterings or mulchings to prevent their succulent rootlets from drying up. Having been in the habit of propagating my *Paradise apples* by putting them in the soil about a month before planting, I tried the same plan last spring to propagate the

quince. I tied the cuttings, which were about six inches long, in bundles of fifty each, and put them in the ground *with their upper ends downward*, after the lower ends had been puddled about two inches deep in a mixture of clay and water of the consistency of common paint. I covered them four inches deep with soil, some under a glass frame, some in the open air in a sheltered and sunny place. When I planted them, very few had made rootlets, but every one of them grew without any further care, so that I now have two hundred fine plants from as many cuttings I had made.

I procured enough water in the little ditch which was to receive them to make the soil, when stirred with the hoe, semi-liquid. I stuck them into it, packing the clay soil firmly around them.

PROPAGATING PLANTS BY GRAFTING.

[CONTINUED FROM JANUARY NUMBER.]

BY A. S. FULLER.

Roots are often used for stocks instead of the stems of plants. Cions may be fitted to a root, or a section of one, in precisely the same manner as they are upon stems or branches. The mechanical part of the operation is very similar in both cases.

Sometimes it is desirable to graft below the surface of the soil, that the cion may eventually take root and become capable of furnishing itself with sustenance from the earth instead of relying upon the original stock. In all cases where it is expected that the cions will emit roots, the junction should be made below the surface of the soil, at least so low that only the uppermost one on the cion shall be above the surface. Fig. 25 shows a common method of crown grafting below ground. The cion B is then severed in about two thirds of its diameter, and this portion removed, forming what is called a shoulder, at C; the remaining portion is then pared smooth and thin at the lowermost point. The stock is then cut off at D, and the bark at C removed with a thin slice of wood to correspond with the lip of the cion, which is then fitted to it, the shoulder of the cion resting upon the top of the stock. The cion and stock are then tied together with strings or waxed cloth, as in splice grafting. A, the surface of the ground.

All the other methods, such as the splice, cleft, crown, side, and saddle grafting, may be applied to roots as well as the stems of woody plants, and it must be apparent that a large root or stock will supply a cion with materials for making a vigorous growth than those of an opposite character. But while this is true to a certain extent, it should also be remembered

that no cion can use any more plant-food than can be assimilated by its leaves; consequently, if the roots of the stock upon which it set gather more materials than can be used, there will be stagnation or entire inaction in some portion of the plant.

When a large plant is severely cut back for grafting or other purposes, and thus



FIG. 25.

deprived of its usual amount of foliage, it will often expend the greater portion of its vitality in producing suckers; but with some species few or no suckers are produced; and as the vitality of the plants can find no outlet except through the one or more cions, it is thus rendered very feeble, simply for the want of an opportunity to perform its natural functions. No root

will remain dormant and still healthy for any considerable time, under circumstances which are naturally suited to promote growth. Knowing this, the propagator of plants should avoid cutting off all of

the branches of a large stock unless he can substitute a sufficient number of cions to supply their place, or at least enough to allow all of the roots to act, although if it is but very little. To avoid the too se-

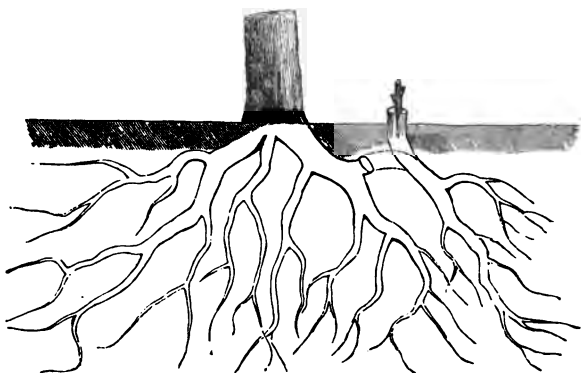


FIG. 26.

vere checking of the stock when of large size, the branches of trees only are grafted, many cions being inserted upon one stock. The same principle is sometimes followed upon the roots; one or more of these are severed, and the end nearest the stem is raised to the surface and a graft inserted, as shown in fig. 26. The cion is allowed to grow one or two seasons, then dug up and transplanted.

Grafting upon large roots is seldom practiced except in rare instances, and where small stocks can not be obtained.

The different methods of grafting are very numerous, over fifty being described in the various horticultural works extant, but they all produce nearly the same results; many of them are so nearly alike that it would be difficult to point any material difference. The French works, in particular, give many different ways of doing the same thing, the slightest variation being deemed sufficient reason for bestowing upon the process a distinct name. For instance, instead of dividing the cion, as shown in one of our modes of saddle grafting, the French gardeners will

divide the stock and insert the cion in the center, as shown in fig. 27. This method is called by Dubreuil the double V graft. Another method, which is applicable only



FIG. 27.

to small stocks, is shown in fig. 28. The cion is made wedge-shape at both ends, a bud being left on the bark about midway between the two points. The stock is divided as shown, but no wood is removed,

the cion being fitted into the incision; afterward the whole, except the bud, is inclosed with waxed cloth, if above ground; but if below, bass strings will usually answer the purpose. This is an excellent method for grafting on pieces of roots of many kinds of ligneous as well as tuberous-rooted species.



FIG. 28.

The one great object in the simple act of grafting is to join a portion of one plant to that of another, and in such a manner that they shall unite and become as one, therefore the more simple the process, the more readily and successfully will it be performed.

HERBACEOUS GRAFTING.

Grafting ligneous or other plants while in a state of active growth is usually termed Herbaceous grafting. The manner of uniting the cion to the stock is very similar, and in many instances the same as grafting with ripe wood. In grafting plants that are in a dormant state, or nearly so, it made but little difference whether both stock and cion were in the same condition of forwardness; we usually, however, prefer to have the cion more backward than the stock; but in herbaceous grafting it is quite necessary that they should be very nearly equal. The union between the

stock and cion is to be made by the growing process, which is active in both, at the time the operation is performed. It is not to be supposed that a growing shoot can be severed from one plant and joined to another without slightly checking growth, but the operation must be performed so quickly that the check will be but momentary, the cion reviving soon after. The green growing shoots of one tree may be transferred to other trees, and made to unite with shoots of a similar age and growth, but not to branches of the preceeding year's growth. One or more leaves should always be left on the cions, and those on the stock but slightly reduced. Splice or cleft grafting is the usual mode, but in some instances side grafting may be successfully practiced. Fig. 29 shows a mode of side grafting on the young shoots of the oak, fig, maple, and similar trees. The pine, spruce, and similar resinous trees may be successfully grafted with their young and tender shoots. The time and manner of performing the operation will be fully given in a future chapter. Nearly all species of herbaceous or succulent plants may be successfully grafted one upon another, provided we keep within

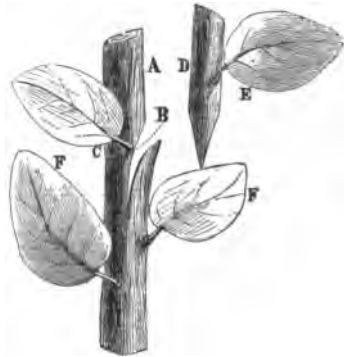


FIG. 29.

certain limits, the same as with woody plants. Red beets may be grafted upon yucca beets, tomatoes upon potatoes, muskmelons upon pumpkins, and so on indef-

nately. With all the methods of herbaceous grafting, it is generally necessary to protect the graft from the direct rays of the sun until a union takes place. This shading is to prevent a too rapid evaporation of moisture from the leaves of the cion, which would cause the leaves to wilt before they were enabled to receive any assistance from the stock.

GRAFTING BY APPROACH.

Grafting by approach is a very simple method of uniting any two stems or branches. The time for performing the operation is the same as that of grafting, that is, early in the spring, just before growth commences. The bark and a small portion of the wood should be removed at the point where the union is to be formed, and the two branches or stems made to join evenly, then tied firmly together, so that the point of junction shall be immovable.

INARCHING.

This method differs from the last only in the manner of manipulation. To graft trees by inarching they must necessarily stand near together, so that their stems or branches can be united without separation from the parent stock. Incisions are usually made similar to those employed in tongue grafting. Fig. 30 shows the stems of two trees ready to be joined near their base by inarching. The branches of different trees

or of the same tree may be inarched, and in this manner hedges and other forms of live fences may readily be formed. Inarching is often employed instead of grafting by the ordinary methods; and after the union has been formed, the inarched branch is separated from the parent stem. In this manner many varieties of trees which are



FIG. 30.

found difficult to propagate in other ways, are quite rapidly multiplied. For instance, young stocks are planted around a large tree, and near enough to it to allow the branches to conveniently reach the stock when ready for use, at which time they are inarched; and when the branches have firmly united, they are severed from the parent tree, and the stocks removed with their grafts. The weeping taxodium, beech, birch, and similar trees are often propagated in this manner quite rapidly.

THE KITCHEN GARDEN.—Make no delay in getting everything ready for active labor in the kitchen garden. See that your manure heap is in condition for immediate and profitable application to the ground. Arrange on map the positions for your potatoes, beets, early peas, etc., that no hesitation or delay may occur when labor once begins. Look over your seeds, and test their vitality, and replace, by immediately ordering new, such as appear doubtful.

Arrange them so that when wanted the whole case will not have to be hunted over to obtain the one wanted. Attend to the rhubarb and asparagus at the first escaping of the frost from the ground. For early potatoes or early planting, whole potatoes are better than sets; to get them very early, start the eyes in a frame or box, some half-inch or so, before planting. Keep off the ground whenever it is quite wet.

THEORY, PRACTICE, SCIENCE.

MR. EDITOR: The *Gardener's Monthly* has in its December number an extract from the *London Gardener's Chronicle* on "pruning the grape." The deductions from that extract, and inference suggested with its kindred subject, is what we wish here to speak of. "Vines pruned in September, while the leaves are on, will have the succeeding crop ripen fifteen to twenty days earlier than other vines pruned in November, all other circumstances being equal. The experiment has been tried for years on vines that yield a supply of fruit from June to January." How vines are pruned in September and still retain their crop of fruit till January, the *Gardener's Monthly* does not show, and we own we can not well understand. "Fifteen to twenty days earlier than other vines pruned in November, all other circumstances being equal." What are the "all other circumstances" that should be equal? English practice for England and American practice for America. What would be the result of pruning in September here? Bursting of the buds and going on with a vigorous growth. Why would this occur here, and not in England? Because of the great difference here in the intensity of heat and light. How is it known that vines under glass in this country would burst their buds by being pruned in September? From experience, knowing that vines have been pruned (with leaves on and off) in July, August, September, October, November, and December. "All other circumstances being equal" can not be applied to vines whose fruit is ripened in different months. For instance, fruit ripened in April or May can not possibly be in a corresponding condition with vines whose fruit is ripe in August and September? Why not? Owing principally to the condition of the organism of the vines at the different periods of the specified times of fruit

ripening. Vines in this country that produce fruit in April and May, generally, and we may say invariably, commence ripening their wood for two or three weeks before the *fruit begins to color*, which is not the case with vines ripening their fruit in August and September. Here, then, we see that there is no corresponding conditions on which the pruning in September can be effected; the latter, in fact, is anything but equal. Vines that are fruited in April or May for several years would be highly benefited by being pruned in July with their leaves on. Why? it may be asked. Because such vines *will* commence a second growth about that time; and as this second growth is generally maltreated, the organism of the plant never becomes properly solidified, and may be known after the leaves have fallen, by an examination of the alburnum exhibiting an open spongy character, which ultimately dies; and if the external bark be removed, this imperfect alburnum may be blown out from its position like snuff from a box; the consequent effect seen the following season is weakness of growth, imperfect sexuality, and general debility, which effects are ignorantly supposed to arise from *early forcing*, but which, in truth, arises from a lack of knowledge of the physiology of the plant's nature and organism, which, if properly understood and treated on the ground of that knowledge, vastly different results would consequently follow, much to the satisfaction of the cultivator, and with an uninjured organism to the vine. Vines of this class and condition, pruned as here suggested, in July, would become wholly resuscitated; and if its condition be watched and understood through the different changes the plant experiences in being passed *round* the natural seasons into the artificial, natural, and back again,

as time passes on, the "wearing out" by crops of fruit will never occur. Pruned in July, and the succeeding crop will not only ripen fifteen days earlier, but a month earlier, if by early be meant the time from bursting buds till the fruit be ripe. Here, then, it will be said that we admit that by *early pruning* the vine it facilitates the earliness of the crop. By pruning in July the plant bursts into the new growth almost at once; but vines started into growth in winter or spring require a month or six weeks of artificial heat before the buds are seen to move. Reckon the time from the bursting of buds to the ripening of the fruit, and very little difference will be found as regards "early ripening," whether we prune in July or November. Is early pruning any benefit to the vine? Most assuredly; but it requires the operator to have a perfect knowledge of the *condition* of the plant, to be successful. It will not do to prune a vine back in September whose fruit is then just ripened; such, for instance, as vines in a cold grapery.

In England, all their vineries are heated by some means, either by hot water or flues. In cold graperies, here, in September, it is pretty well known that such vines then are growing pretty freely, and we think it would be hard to find an intelligent gardener in the whole Union that would be silly enough to prune such vines back at that time; still, some persons may be induced to ruin their vines by following an English practice imported here—a practice far ahead of science. "Early pruning" should always be performed on the vines if perfection of fruit be an object. The sap should never cease flowing *entirely* before pruning is commenced, and then it should be effected by degrees. For instance, we notice the vine has ripened its wood, but still there is some young growth going on at the end of all the laterals, but not with force enough in the vine to burst the principal eyes or buds. In this condition prune back the

laterals and leave the spurs or branches which have borne the fruit stand bare, with the exception of the *proper* leaves; now watch the vine for five or six days, and if there be no indications of bursting the top buds on the spurs, then take the knife and cut out all the buds on the spurs, except about three or four from the base. The sap in motion will then swell up these base buds round and plump. In a few days more the whole of the wood or spur with leaves on may be cut back to the point desired without fear of damage. This requires much experience, however, and is to be practiced successfully only when much interest is taken in the vine, and by a person of a very observing mind. Such operations, indeed, can not be explained in writing; it requires practical examples.

Vines "early pruned" will never bleed at the return of the growing season; this bleeding, however, the *Gardener's Monthly* contends, is no harm to the plant; we would ask, is it any good? Do we ever find vines *bleeding* in a state of nature, unless by accident? It may be said that bleeding is nothing more than the running out of so much water, and that it is not sap. We don't believe any such logic. It evidently was sap the *season before*, and became solidified through all the ramifications of the plant structure; and when heat became applied to it the next spring, its gummy particles became liquidized, and of course expansion takes place in the pores of the wood; and if it does not, or can not, run out at cuts at the end of its branches, it will run out at the points where nature intended it should run out, and that is at the buds. What is the motive power of growth? Sap expanding by heat. The very force of this expansion is the sole cause of the bud moving. Now, let this water or sap run out at the ends of the shoots for a week or two, and does any intelligent person mean to say it is no harm? The harm is a weakening of the system with a *later*

bursting of the buds. Weakening, because the moment the bud is pushed out, a return of the fluid to the roots is effected, which puts the roots into action, absorbing crude fluids from the earth. We know some are of opinion that there is no such thing as circulation of the sap in the plant structure; but we are not of that philosophy, for we well know that in the animal creation there is; and we also know that when and where a *law* is established, it holds good, analogically, throughout the whole ramifications of God's creations; consequently there is circulation of sap in the vegetable creation. No circulation! Why, the clouds circulate, the rains circulate, the tides circulate, the earth, moon, and stars circulate, together with all the vast canopy, and sing in circulating praises to the great Author of so wondrous a circulating system. We have penned these remarks, not to prevent experiment or

throw a straw in the path of scientific research, but to suggest *caution* in experimenting. We know that many of our large and extensive horticultural pursuits are conducted with an amateur's experience, persons in the business from a real love of it, and wanting that experience that can be obtained only through a long period of toil and observation; should such a one in a state of ecstasy rush into his vineyard in the month of September and prune all his vines, under the dreamy hope of bringing his crop of grapes—which formerly but half ripened—some fifteen or twenty days earlier into market, or with the thought of being able to *ripen* his much loved Maxatawney, the result may cost him more than if he had worked on in accordance with the general order of things. Our advice to the readers of the HORTICULTURIST is, *think twice before acting once.*

JOHN ELLIS.

SHELTER FOR ORCHARDS.

THE value of shelter or climatic screens for orchards is becoming more and more apparent every day. As our forests become cleared away, the climate grows more harsh, dry, and absorbent of vital life, and our fruits evince it in their knoty and various deteriorated forms. The Western prairie country has been, through some of her most thoughtful horticulturists, urging the point and advantage of evergreens as shelters for many years; and gradually the persistent efforts and urgings of these men are becoming exhibited in the free planting of evergreens and deciduous trees as belts or screens protecting the orchard from the severe cold winds of the west and north, and even on their prairie lands serving, as thermometrical records show, to assist in reducing the extremes of temperature. But it is not only the Western prairies which require this protection and amelioration of atmospheric influence; our

New England and our Northern and Middle States, as western New York, Ohio, etc., all apparently exhibit the want of it, at this day, as strongly as do the bleak, open prairie regions. The records show that a quarter of a century since, fruit-growing, from the peach upward, was just as much a certainty in the Eastern States as in the most favorable of the new Western sections; but while skill and knowledge and attentive cultivation have increased, the production in quantity and quality of fruit has decreased, until many persons in the New England and Northern Middle States now hesitate to plant because of their location being an uncertain one for profitable return. Few consider the extent of forest that is yearly being cleared away, and with it the change created from a moist, equable climate to one of a dry, harsh, and extremely variable character.

It is time we set about the labor of correcting this feature of climate, and hence we now urge on all our readers to plant screen belts of evergreen and deciduous trees all around their farms or gardens, and especially around their orchards, and those portions of their grounds occupied by stock yards, out-buildings, etc. We would mingle more or less evergreens among the orchard trees also, although some growers will tell us that the orchard trees contiguous to the evergreens will be spoiled in their symmetry, etc., and perhaps in the amount of product, on account of one side being swallowed up and overshadowed by the evergreens; but we must be permitted to say that, having examined this matter pretty thoroughly for some years, we are now convinced from personal observation that trees contiguous to and sheltered from the north and west by evergreens, have yearly produced their fruit and resisted late spring frosts, when those more exposed to currents of air and all unprotected, have failed. The present record of hardihood of varieties of fruits, we have no doubt, will be entirely changed in twenty years, provided due attention be given to the planting of evergreen or other trees as climatic influential agents. It is less than a

quarter of a century since all and every variety of apple grown in the New England States was regarded as perfectly hardy and successful in its order as an orchard fruit; but now we are getting occasional records of the failure and want of hardiness of old varieties, corresponding almost entirely with records of the same varieties upon the bleak, open, unprotected prairies of the West. Again, we are getting conflicting statements of the hardihood of varieties West, based upon the position of the orchard, location, and its sheltered or non-sheltered surroundings. All these point us most plainly to the fact, that while we practice skill in pruning, care in cultivation, we must remember that temperature is an all-important agent, and that if we expect to continue a successful and profitable fruit-growing country, we must take into account the effect produced on climate by foliage of trees, in their absorbents, shades, and evaporation, and set ourselves at work with a will toward the production of a remedial assistant agent, by planting belts, masses, and groups of evergreens and other trees, whose object is the creation, by their growth, of increased moisture and reduced extremes of temperature in climate.

EVENINGS AT "BRIGHTSIDE."

BY W. WAYBRIDGE, ESQ.

"Old Winter has come with his cold, chilling breath."

THE early and the latter rains fell copiously and gave us an abundant harvest. Our gardens never made a better yield. Of peas, we had abundance for ourselves and neighbors; our watermelons—"Orange" and "Mountain Sprout"—were splendid; our tomatoes—mostly "Keyes"—though late, exceeded expectation; and our root crop was the best we ever had.

We set out some six thousand (6,000) Concord grape cuttings in the spring, and about five sixths of them started, and have

grown quite well. Our Victoria currants bore profusely; our Lawton blackberries sustained their reputation. "Brightside" is in a valley; the mean temperature is from one to two degrees lower than in the town above; yet the soil is sandy loam, and the Isabella grape there ripened to perfection. The wild grapes in the vicinity were injured by the early frost. Our bee-hives were well stored with honey, which now is selling—if in small glass boxes—at about 40 cents per pound.

From ten acres—and ten acres is enough—we have filled our barn, our pantry, and our cellar, and now enjoy the guerdon of our toil, and wait in hyemal—I had almost written hymeneal—repose for the opening of another season. A dazzling sheet of snow surrounds our comfortable dwelling, and stretches far away on every side to the ever-green forests. The long icicles hang over the door; the moon suspends her silver bow above a low line of stratus cloud in the west; the stars shine out with a kind of "winterish sparkle," and the distant tinkling of a slender waterfall is heard. Old chanticleer—my little Florence thinks him very a-rooster-cratic in his way—has "turned in," with his well-fed harem, for the night; the "yearlings" are gently reposing near their dams, and "Charlie," the wounded war-horse, is profoundly musing on some battle race upon the "sacred soil," or casting "a long, lingering look" in front for his accustomed "ration." We ourselves are cosily seated, pater-mater familias, and the "little circle" negligently around us, for the long winter evening. Shall I tell you how we spend it? Well, variously; but this one night may serve you as a kind of sample.

Our house, as every one should be, is well supplied with books; but books, as blueberries, are always better in their own appropriate season. This evening we therefore read aloud in turn a part of Shakspeare's "Winter Night's Tale;" then Thomson's "Winter," beginning,

"Ah! little think the gay, licentious crowd,"

continuing to the end. Burns' beautiful "Winter's Night" follows—

"When biting Boreas, fell and doure," etc.;

and then we close our poetry with "January's Husbandry" of quaint and rare old Thomas Tusser—

"When Christmas is ended, bid feasting adieu."

We stop at every curious verse or word and criticise the fault or beauty; and on closing make a general resumé of the whole, comparing it as to style and sub-

ject matter with such other kindred writers as we know in German, French, or Italian. We pass from poetry—and the little ones most gladly—to the items in the "Evening Traveller;" thence to the last number of the *HORTICULTURIST*, which we always read with pleasure, even to the last advertisement, and then discuss the merits of the various articles. Then the "young democracy" bring forward Demorest's "Young America;" and while the kitten sits in a kind of sleepy wisdom in the corner, amuse themselves with "puzzle-pictures," riddles, and conundrums till the number is exhausted.

"Now for pop corn!" some one cries; and in a twinkling we hear the "popper" shaking over the red-hot coals and the bursting of a thousand grains of maize, like the explosion of the India crackers on a Fourth-of-July morning. We all partake of the snow-white luxury, and then pass round the luscious grapes, which careful culture has produced for "winter evening consolation." "A story! yes, father, a story of the war," the young "wide-awakes" now cry; and so we essay to charm their fancy and inspire their patriotism by telling how Kilpatrick started on his famous raid to Richmond; how Gen. Grant went through the "Wilderness;" or how the President was shot while listening to the "American Cousins" at Ford's Theater, Washington. The "regimentals" from the battle-fields are now brought in, and every one takes in the hand the identical minie ball that struck one of our number on the bloody field of Gettysburg. Music now comes on to close the evening. "Tramp, tramp, tramp!" for soldiering memories, and then duets—flute and piano—from "Norma," "Martha," "Somnambula," "Faust," and "Traviata." We sing a sacred song in harmony; we thank the glorious Giver for his marvelous mercy; take the parting kiss, and say the kind "Good-night!" "father," "mother," "Florence," "Willie," "Emily," "Charlie," "Paul," and seek repose and slumber on the peaceful couch.

HORTICULTURAL REMINISCENCES.

PROGRESSION is the great idea of this era and this community, and we move so rapidly that it becomes us occasionally to stand for a moment and look back, so that we may note the extent of our progress.

The social and political ordeal through which we have passed, the terrors and achievements of which continue to surprise us, has made the history of the past decade quite exceptional in all its bearings. A peaceful art like that of horticulture, which has no attractions for the warrior or revolutionist, can not hope to flourish at a period when military activity is the order of the day, and warlike prowess the first recommendation to distinction. Yet grateful as we should be that our Northern fields and gardens were not actually devastated by war, but preserved by loyalty for the continued practice of peaceful arts and occupations, we have still to regret the loss of much of that happy spirit of improvement and progress which marked the first half of the past twenty-five years.

While we can congratulate ourselves that we have not lost any material portion of the horticultural riches accumulated, we must regret the circumstances which prevented our having achieved much more. The suspension of that mutual intercourse among those devoted to rural pursuits over the entire national domain is not the least of the disadvantages experienced; the suspension of experimental culture in its various departments, and the recording of the results of the same, are material losses to the period through which we have passed. But we are again on the track. This year is the opening of a new era in which horticulture is destined to make rapid strides toward the amelioration of the social condition of many of our suffering countrymen. And our horticulture, to effect this, must differ, as it has done, from that of older nations; it must

have the utilitarian aspect; its aim must be still more, as it has partially been in the past, to produce the fruits and esculents in greater abundance, so that the masses may cheaply partake of them. The financial condition of the country demands this. Every acre or rood of ground hitherto lying waste or unappropriated to the uses of its proprietor, should be made to bear some crop of small fruits or esculents. How many thousands of acres of lots are to-day barren wastes, or but partially cultivated, even in the vicinity of our great cities, which by the expenditure of a little capital judiciously might be made to bear tenfold!

But we must not enter on this portion of the subject until we have taken a retrospective glance at our progress in the department to which the *HORTICULTURIST* is devoted, and to which it has lent efficient aid for over twenty years.

When first we became acquainted with the *HORTICULTURIST*, it was full of the life and vigor of its energetic and hopeful editor; it had been fully inaugurated, and was the medium for every fact, and even fancy, that enthusiastic amateurs and practical gardeners might offer. Such a liberal policy, if at times it encourages prolixity and the dissemination of vague ideas, supposed to be elaborate theories, also encourages novices to greater knowledge and proficiency, and in the end lays the foundation of a sound horticultural literature, and promotes that skillful cultivation which is the great desideratum. And it would seem that, after a long interval, the *HORTICULTURIST* has again returned to its original design: that of a free and liberal exponent of practice and theory.

But the presiding genius that ushered it into favor has long since passed away; nay, is almost forgotten in the strife of competition among grape growers and grape

writers. Periodically we must return to the tomb, and declare that here rests "one who feared not the truth."

At the time that Andrew Jackson Downing took his place as the presiding genius of American horticulture, we had not advanced very far in comparison with our present position. We do not pretend that horticulture had not made a fair start, but as the history of that time and its antecedent quarter of a century is permanently recorded in the life of Downing and the transactions of societies then established, we shall leave it there. How great an impetus was given to the improved landscape gardening of the country by Downing's writings and personal efforts we leave others to record; to us, his great work was the recognition which he compelled the jealous and overbearing leaders of the art abroad to give to the growing taste evinced here, and the rapid progress which the united efforts of liberal amateurs, skillful practitioners, and enterprising nurserymen had effected.

The recognition of Downing's works by the leading horticultural writers of Europe was the first step to the inauguration of a mutual good feeling between those of whom it was necessary that we should learn and borrow—and ourselves.

Our horticultural literature was then European. Our practice in the more difficult and advanced branches of the art was

little else. Our plants and seeds were to a great extent derived from the same sources. And our workers, our gardeners, or, if you will, our "professional horticulturists," were they not received by the same ships as our books, tools, and plants? To-day, what is our position? Look at our literature; volume after volume is thrown from the press, so rapidly that it would seem as if no thought was required to write and no skill to print horticultural works. Look at our commercial establishments; their extent is unknown, even to the best informed among us. Look at the mansions built, each decorated with choice and rare arboricultural gems and specimens; the conservatories filled with well-grown specimens of the most extensive exotic flora.

Now let us pass to the more pleasing point of view. Look at our achievements in fruit culture; at the immense value of the most insignificant fruit—the strawberry. The working man can no longer enjoy his summer evening meal without his dish of strawberries on the table. We could wish they were cheapened for his use at least one half.

But we shall take occasion at another time to point out more minutely how these things have been achieved, provided always that the editor of the *HORTICULTURIST* considers our reminiscences worth laying before his readers. DUNS SCOTUS, JR.

FASTENING AND STRETCHING THE WIRES ON TRELLISES.

BY HORTICOLA.

Nothing is more desirable for the horticulturist and vine grower than to have some cheap and convenient arrangement for stretching and loosening the wires on trellises. M. Du Breuil describes and figures *two* in his works; but either of them requires a greater outlay than warrantable, and more time to manage them than can generally be spared. They are, besides, not easily obtainable. *Saw stiffeners*, some-

times recommended, are too expensive, the same is true in regard to hooks, about six inches long, with a screw cut at the longer end, and a winged female screw to fit it. In order to use them, the posts must be perforated, by which process their strength is impaired.

Last winter I was present in a hardware store when a gross of *tuning pins* was sold. It struck me at once that they were just

what was wanted to fasten and stretch the wires of trellises as well as the strings of pianos. Those of the larger size were about two and a half inches long, nearly cylindrical, and a little thicker than a good goose-quill; they have their upper ends flattened or squared to fit the *tuning key*; about half an inch below this flattened upper part each is perforated with a little round hole, and a very shallow, hardly perceptible thread is cut on the lower part.

I bought immediately a gross myself, together with a tuning key, in order to try whether they would answer for the trellis as well as for the piano. As the holes were too small for trellis wire, I made a little drill, to make them larger, on a lathe

which is in my possession. Any locksmith will do that little work very cheaply. All that is needed besides is a gimlet or bit to bore the holes in the posts, but of considerably smaller diameter than the tuning pins, which must be driven into them with a hammer. They will then only yield to the tuning key; the stress of the wire will not loosen them at all.

They are not clumsy in their appearance, and are so easily managed that I think it my duty to call the attention of those interested in the matter to them. My friend the editor of the *HORTICULTURIST* saw them last summer on my grounds, and was very much pleased with their working.

ANOTHER CHAT ABOUT OLD BOOKS.

THE December number of the *HORTICULTURIST* was a prominent item in my mail matter one day last week. I opened it, and looked first in front and then at the end to see if I could find a list of contents, but none such could I discover. Really, Mr. Editor, I felt angry with you for once, and I entreat you not to let another series of numbers go forth among your readers without at least a list of the more important articles being prefixed or affixed to each. There being no table of contents, I began at the beginning, and never stopped until I had read straight through—advertisements and all. Indeed, I did not *quite* omit even the index, but gave it more than a passing glance.

Our friend Elliott's most interesting article, "A Little More Grape;" the editorial on Geraniums; Fuller's article on Budding, with numerous shorter articles, followed up by the skirmishing columns of the "Editor's Table," seemed to indicate that if the *HORTICULTURIST* has not yet *all* the talent of the country, it at least has its share.

Among the pleasant things which caught my eye was the note by the well-known

writer A. S. F., in which he alludes to some former scribblings of mine. He seems to regard them as interesting as well as instructive; and as I claim no honor beyond that of a mere reporter, perhaps I may be pardoned for sending you another conversation, to which the article just mentioned gave rise.

In the evening, as soon as supper was over, and I had attended to the various little duties incident to country life, I walked over to my friend B., having first put the *HORTICULTURIST* in my pocket, for which, by the way, my wife gave me a good scolding as soon as I returned, as she thinks she has as good a right to it as I have. I found B. at home, and asked him if he had seen the article by A. S. F.

B. Yes. It is a pleasant, sensible article.

L. But is it true that McMahon's book is a mere reprint of Abercrombie's work?

B. Perhaps in calling it a *reprint*, A. S. F. uses language a little too strong. McMahon borrowed largely from Abercrombie, but he modified the original a good deal, and he added much new matter. I had the misfortune to fall on the ice last night and sprain my ankle, so please hand me that

green book and its companion in musty old leather, and also McMahon's book, of which the first edition stands on the shelf, just below Abercrombie. Here we have one of the latest editions of Abercrombie. London, 1857. Edited first by Main and then by Glenny, and now forming a 12mo of 459 pages. The old edition is larger, and McMahon's is an octavo of 666 pages; and if you examine it closely and compare it with Abercrombie, you will see that a good deal has been added and changed.

Loudon* refers very respectfully to McMahon's book; and as he was unquestionably *familiar* with Abercrombie's work (which was the pocket companion of most young gardeners at that time), it is strange he did not notice the plagiarism. By the way he describes the book—as a 12mo—I should like to know whether this is a mistake, or whether the book was republished in Great Britain.

Abercrombie was a good gardener, and wrote several works besides this. There are two books standing on that shelf—Johnson's "History of Gardening" and Felton's "Portraits of English Authors on Gardening." Please hand them down. Johnson gives quite an interesting account of Abercrombie. "He was born in Edinburgh in 1726, near which city his father conducted a large market-garden."

L. Why, I read the very same words not an hour ago. Have you "Wet Days" at Edgewood" among your books?

B. I believe so. There it is.

L. That sentence at least is transferred *verbatim* to "Wet Days." Is the whole article copied?

B. No. The materials are evidently almost entirely from Johnson; but then this is all fair. Mitchell has re-arranged them and converted them into a Life of Abercrombie, very different from that of Johnson. And so with McMahon. He took many of the paragraphs of Abercrombie, and many

of his directions are quoted *verbatim* from "Every Man His Own Gardener." But Abercrombie's work, if simply reprinted, would not have suited our country, while McMahon's book has been received with great favor.

L. It would be interesting to examine how far this plagiarism is carried on.

B. Yes; but unfortunately the labor is great and the reward small. Still, we can find enough of it if we seek it. If our friend R. had not borrowed it, I could show you a recent book in which even typographical errors have been stolen; a well-known work on flowers is taken, cuts and all, from the work of an English author; and we have recently had an instance of a standard English book being appropriated piecemeal by one of our periodicals, and published as original. This reminds one of the Western editor, who being shut out by a violent snow-storm from access to the world at large, promised to keep up the issue of his paper "as long as the stories in the old almanac lasted."

You see those four ponderous folio volumes bound in rough old calf. They are Prof. Martyn's edition of Miller. Please hand me the first volume. I read in it the other day a curious passage in regard to this very subject. After giving a very complete list of authors, he says: "It would be a curious speculation to ascertain how much, or rather perhaps I should say how little, in this copious list of authors and their works is truly original. The venerable Judge Fitzherbert, the father of English husbandry, gave a good example, but it was not followed by many, except Sir Hugh Plat, Gabriel Plattes, and the writers in the time of the Commonwealth—Sir Richard Weston, Hartleb, and Blith. The old gardening books previous to the Restoration are of very inferior value, with scarcely any pretense to originality, if we except Scott, Lawson, Parkinson, and Austen."

It would not be strange if Abercrombie himself had done unto others as he had

* Encyclopedia of Gardening (1850), page 389.

been done by. Prof. Martyn seems to hint this in the following sentence: "Mr. Miller during his long career had no considerable competitor until he had approached the end of it, when several writers took advantage of his unwearied labors of near half a century, and fixed themselves upon him as various marine insects do upon a decaying shell-fish. I except Hitt and Justice in 1755, who are both original, as is also Hill, after his fashion, but his gardening is not much founded in experience. Hanbury first appeared in 1758; Wheeler, in 1763; Abercrombie, under the name of Mawe, in 1766; Dicks, in 1769."

L. Well, this does not argue much for the morality of gardeners.

B. It is the same in all other departments of literature. Even theology is not exempt from it. A few years ago a very learned treatise on theology was published in this country. Examination showed it to be a mass of plagiarism.

L. I have been looking over "Wet Days at Edgewood" lately. I see he refers to several works on the bibliography of Agriculture. Have you got them?

B. Most of them. Johnson's History of Gardening, Felton's Portraits of English Authors on Gardening, Weston's Tracts, and Donaldson's Agricultural Biography are the chief works in this department referred to by him.

L. I hope that if by "bibliotheca" A. S. F. means a dictionary of horticultural works, he will publish it, as such a catalogue would be very valuable.

B. It would certainly be of very great assistance to all lovers of books. I had a letter the other day from the Professor of Agriculture in one of our colleges, and he tells me that he has been engaged for some years on a work of this kind;

He is now pushing it forward, and knowing that I had a few curious old books, he wrote to make some inquiries about titles, dates, etc. I understand that he intends to include not only horticulture and agriculture, but many of the kindred sciences.

L. Such a book would be of incalculable value, not only to every book collector, but to every student, and I hope it will point out the most thorough and the best works in all departments of agricultural science.

B. That would be not only a difficult, but a dangerous undertaking.

L. Do any of the works previously mentioned include American authors?

B. I believe not. The fact is, our American Agricultural literature is a *terra incognita* to bibliographers. None of our American publications do us justice. Trübner's works on American literature is disgracefully meagre. Thus, Adlum's name is not given in it. Either Alibone's Dictionary of Authors, or the New American Cyclopaedia, in whose pages every tenth-rate literary author is found, does not mention Adlum. I forgot just now which it is that leaves him out entirely, but it is not a matter of much consequence, as the account given by the other is very meagre and very erroneous.

L. Which was the first work on Agriculture published in the country?

B. Really I can not tell. Your question is a very difficult one to answer. The oldest work in my possession is that by Varlo, in two volumes.

And then I took from their shelf a very curious work on Agriculture. But I see that I have taken up enough of your space and time with my rambling chat, so, if you please, I will defer to a future number an account of the first American work on Agriculture. LIBER.

THE LAWN.—Look over the lawn carefully, and remove every weed, root, or false grass that may be found; then either re-

place with a piece of turf, or rake up and sow thickly with lawn grass seed, rolling and pressing firmly.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

CHESTERTOWN, KENT COUNTY, MARYLAND,
December 5th, 1887.

MESSEURS. EDITORS: Our first snow is falling out of doors; but within, the fire is cheery; and while the snow covers the garden with its blanket, I have thought it would probably not be uninteresting to your readers to have another letter from the "Eastern Shore."

The year past has not been one of great prosperity to our farmers; the wheat crop was light when compared with the great show of straw, and the crop of Indian corn is not two thirds of an average. The peach crop—the great money crop of this county—was *too* abundant, and low prices ruled; yet, nevertheless, the fruit growers of this section unite in declaring that "peaches pay better than wheat and corn."

Still, I am disposed to think that the cultivation of the pear will ere long be the leading fruit interest of this county. On our best lands here the crop of pears is abundant and uniform year after year. I am inclined to think that your correspondent from "Vineland," N. J., some months ago, had never visited this part of the country, for if he had he would never have decided that the poor, scrubby lands of that vicinity were the best for pear culture. Our land here is high enough for good drainage, very gently undulating, and of a texture which I can describe no better than by using the words of one of our successful farmers—"it breaks up just like coffee grounds," a dark hazel loam, upon which anything natural to the climate will grow luxuriantly. We can not boast of cheap land, to attract settlers, for our own farmers know too well the value of their lands to

allow any to be sold below their value. Within the past year or two we have had extensive land sales here, which were attended by men from all parts of the country; but almost without exception the land was bought by Kent County men, thus showing that those who know the land best value it the highest. In no county in the State has there been a more rapid agricultural and horticultural improvement, and in no part of the State is land advancing more rapidly in value. Some years ago a farm in this county was sold under a mortgage of a few hundred dollars. The person holding the mortgage went to see the farm, and concluded that it would not pay him to buy, that he would be glad if he made his debt out of it. The farm was sold. An enterprising man went upon it, and two years ago I passed the place while he was breaking fallow for wheat. I remarked to the proprietor that he was plowing very deep. "Yes," said he; "but you see the plow turns no clay; and that is the only fault I find with it—it is too rich; all my small grain is liable to lodge and fall down." This farm, which years ago was thought dear at \$10 per acre, can not be bought now for \$150 per acre.

But about the garden. Well, I wrote to you last summer that I had tried McLean's Little Gem Pea, and found it very superior as well as early. I wanted to try Carter's First Crop, and ordered the seed, and got a mixture of tall Marrowfat and Bishop's Dwarf. From seed marked Lester's Perfected Tomato, at least two thirds of the plants produced the old knotty Red Tomato. New York Improved Prickly Egg

Plant turned out to be Long Smooth. Scarlet Turnip Radish was White. Dwarf Erfurt Cauliflower was mixed with a tall, no-head sort. From another source, in response to an order for Long White French Turnip, I received White Flat Strap-leaved. This hardly seems square, and I am not sure but it would be best to give the public the names; but as the parties will probably see, and perhaps take warning from this, I will let them pass now, hoping they will not serve any one else so. I also ordered two packages of "Keyes' Early Prolific Tomato seed—*thirty days earlier than any other sort.*" In due time they came, with a flaming picture of a round red tomato on each paper. The seed was sown at the same time, or perhaps a day sooner, than my other tomatoes; the plants grew vigorously, set their fruit early, and ripened about ten days later than the Smooth Red; in fact, fruit of the Smooth Red variety raised from seed sown in the open ground was for sale in our market by the bushel before I had enough "Keyes" ripe for a mess. I am of opinion that the seedsmen were "sold" by the grower.

One fact in reference to fruit, and I am done. The Catawba Grape was the only variety in my garden which perfected its fruit the present season; Isabella, Northern Muscadine, Delaware, and others, mildewed, rotted, dropped; the Catawba, with its branches intertwined with those of the dropping Muscadine, brought its fruit to maturity. I have a great deal to say about fruit, but forbear, for fear that I have already tired you.

Should you ever get a notion to look at a peach orchard of 100,000 trees in one inclosure, all cultivated as cleanly as a garden, pay us a visit, and we will show you several. Yours, etc., W. F. M.

ABOUT RASPBERRIES.—G. F. R., Toms River, N. J.—"I notice some writers regard the Clark as similar to Kirtland. Do you regard them as the same? Would

you recommend planting the Kirtland here?"

We believe it is pretty well settled that the Clark and Kirtland are distinct varieties, although one of our reliable fruit men has said that in his ground they were very similar. Probably his plants of Clark were incorrect to name, as most growers speak confidently of their distinctiveness. We should not hesitate to plant largely of Kirtland, although we do not regard the berry as quite firm enough for a market sort, but it is a great deal better than Philadelphia, which to our mind has nothing to recommend it but productiveness and hardihood of cane—no more so, however, than the Kirtland. In buying the Kirtland, be sure of the true sort, as there are two or more sorts now growing under that name.

NATURAL SOILS.—It is often remarked that such and such a plant does well in its natural soil. We confess our inability to define what forms a natural soil for any plant, for many plants found wild are—although identical in themselves—embedded and growing in soils of entirely different components. Observation has taught us that one plant under our artificial cultivation succeeds best in clay, another in sand or sandy loam, etc., etc., but at the same time we find that plants have the power to substitute one element for another under certain circumstances, as plants ordinarily requiring potash subsist in soils entirely void of that salt, provided in place of potash it contain soda.

A BED OF LILIES.—By all means plant out a bed of Japan lilies. Select, if you can, a position where when they come into flower you will have to look up rather than down to see the flower; make the ground two feet or more deep, working into it plenty of well-rotted compost manure; then get the varieties of lily in all their numbers; plant them at distances of about one foot apart each way, setting the bulb in clean sand and covering about three inches deep.

HOLLYHOCKS.—The production of seedling varieties of the hollyhock has been very great during the past ten years, and at this time they equal, if they do not surpass, in beauty the dahlia. They are perfectly hardy, and can be left in the open border with impunity. Seeds of choice kinds sown early in the season in a hot-bed frame, and got ready for transplanting in May, will flower the same season; while divisions and cuttings from choice varieties already produced may now be made, and by giving them a slight start in a frame, will transplant and bloom finely, forming one of the cheapest and most effective background features for a flower garden imaginable. Make the ground deep and rich with abundance of well-rotted cowdung.

DECIDUOUS TREES AND SHRUBS should be planted just as early in the season as the ground will work freely. Do not delay; for although many a tree succeeds when transplanted late in the season, should an unfavorable season occur, it will not grow as vigorously, and frequently gets so small a hold in the soil, that although alive at the commencement of winter, spring finds it without vitality sufficient to make a new growth.

HARDY ANNUALS.—In selecting varieties of hardy annuals, seek rather a few of those that bloom freely and grow vigorously, than to make your collection one of varieties. Very little satisfactory effect can be obtained from a great variety, many of them possessing no distinctive character or color, however pretty and curious they may be to the botanist. Large masses of a few sorts and of distinct colors, white, crimson, etc., such as candytufts, phlox Drummondii, etc., will give, are very effective either in small gardens or on extensive lawns.

A **CHEAP** hot-bed frame will hold a great many cuttings, which may be grown for bedding out, and make gay the garden all summer at a very small cost aside from

a little daily care. Prepare the bed in the ordinary manner for growing of early kitchen garden stuff; let the rank heat escape—or, rather, leave it a week or so, until it becomes sweet in its regular warmth; then procure a few good bushy plants from a commercial gardener; make up the cuttings and plant them in sandy soil. Shade for a time, but give air and avoid too much moisture, as it is liable to create mildew and cause the cuttings to damp off.

HERBACEOUS PLANTS.—Hardy herbaceous plants should be transplanted as early as the ground can be worked freely. After planting, cover the crowns with an inch or two of leaf mold or chip dirt, as it will greatly assist them in resisting the freezing and thawing until the full opening of spring. In digging over beds of herbaceous plants, be careful, as many plants, like peonias, campanulas, etc., are often destroyed by spading or forking, and thus destroying their crowns, ere they have shown their buds above ground. It is always well to be in time; but better wait a day or two more rather than dig, until each plant can be distinctly traced in its position.

MAKING GRAPE CUTTINGS.—In earlier days it was the practice to make grape cuttings with three eyes, cutting anywhere between two eyes at random, or rather always to avoid the bud, because of an impression that if cut too near, its vitality was lessened. Next came the practice of two eyes, and cutting as near the base of the lower bud as possible without cutting into it; then came the single-eye system, which although old in green-house practice, was new to our native-born characters. Now we have another line of cutting, which is on a two-eye cutting, to cut near the lower bud square across, then shave down the sides of the buds for an inch or more in length, it being claimed that this course induces a yet more rapid formation of roots than either of the others under the same treatment.

NORTHERN ILLINOIS HORTICULTURAL SOCIETY.—An organization has been effected under the title of The Northern Illinois Horticultural Society, and the following gentlemen elected for the ensuing year:

President—Samuel Edwards, La Moille, Bureau Co.

Vice-Presidents—1. Ira L. Bailey, Mt. Carroll Co. 2. A. R. Whitney, Franklin Grove, Lee Co. 3. Smiley Shepherd, Hennepin, Putnam Co. 4. Tyler McWhorter, Aledo, Mercer Co. 5. Edgar Sanders, Chicago, Cook Co. 6. Robert Douglas, Waukegan, Lake Co. 7. B. N. McKinstry, East Sumner, Kankakee Co. 8. Alexander Strachan, Rockford, Winnebago Co. 9. W. E. Luken, Sterling, Whiteside Co. 10. C. H. Rosenstiel, Freeport, Stephenson Co.

Cor. Sec.—D. Wilmot Scott, Galena, Jo Daviess Co.

Rec. Secs.—H. D. Emory, Chicago, Cook Co. D. E. Peck, Marengo, McHenry Co.

Treasurer—L. Woodward, Marengo.

Executive Committee—Samuel Edwards, *ex officio*. Ira L. Bailey, Mt. Carroll. E. H. Skinner, Marengo.

The Constitution of the State Horticultural Society, with slight amendments, was adopted.

KANSAS HORTICULTURAL SOCIETY.—The friends of pomology met at Lawrence, Dec. 11, 1867, and organized under the name of the Kansas Horticultural Society, and adopted a constitution and by-laws. Officers were elected as follows:

President—Wm. Tanner, Leavenworth.

Vice-President—C. B. Lines, Wabaunsee.

Secretary—G. C. Brackett, Lawrence.

Treasurer—S. T. Kelsey, Ottawa.

The next meeting will be held at Leavenworth, at which time the following Committees will report:

Apples—G. C. Brackett. Pears—Dr. Housely. Plums and Peaches—W. E. Barnes. Cherries and Small Fruits—William Maxwell. Grapes—Dr. Stayman and W. E. Barnes. Evergreens, Forest Trees, and Hedges—S. T. Kelsey.

We rejoice to note these movements in

horticultural progress. The West is alive, and the expansion of the subject there has no restriction, but is rapidly swelling and developing a rich harvest of instructive knowledge.

DRAWINGS AND COLORINGS OF FRUITS AND FLOWERS.—We desire especially to commend to our fruit and flower growers an artist in the production of fruit and flower drawings and colorings whose works we have examined for years, and whose merits, owing to his own modesty and hesitancy in bringing himself before the public, have but by few persons been duly appreciated. If we recollect aright, when the lamented A. J. Downing prepared his copy of fruits, etc., with colored illustrations, the plates were first sent to France, for the purpose of being colored; but when returned were found so imperfect, that the author sought about for some one capable of retouching them, so that they might appear passably if not creditably. That man was found in Joseph Prestole, Sen., then a resident of the State of New York, now of Amana Homestead, Iowa. During the past two or more years we have frequently examined his work, and we now commend him, without his knowledge of our so doing, to all our horticultural friends, and we beg to say you will find his work quite satisfactory, and his prices reasonable, and at the same time you will be assisting a man whose love of his art has kept him always far from riches.

NEW JERSEY STATE AGRICULTURAL SOCIETY.—This Society held its annual meeting at the State-House in Trenton, January 15th. The meeting was well attended by persons interested in agriculture, from different parts of the State. We will give a full account of the proceedings in our March number.

WARSAW (ILL.) HORTICULTURAL SOCIETY.—Officers for 1868: *President*—A. C. Hammond; *Vice-President*—George B. Worthen; *Secretary and Treasurer*—Thos. Gregg. Address of Sec'y, Hamilton, Ill.

ROOT PRUNING THE GRAPE.—In all of dwarf tree culture, when the system is performed upon a tree whose roots are of a free growing stock, it is the practice to root prune, because it has come to be well known that without root pruning the tree soon becomes gorged with sap, and productive of unhealthy water shoots instead of short spurs and fruit buds. The working of the pear on the quince, or the apple on the Paradise, because of these varieties making naturally but small trees, and mostly surface lateral roots, has the same result as root pruning of the roots of vigorous free-growing stocks.

This necessity of a reduced root being a requisite for a reduced tree has become patent to all cultivators of trees, but may it not be applicable to the culture of the grape? Nature makes no mistakes, when left to herself, though we may make enough of them in interpreting her meaning, and in our endeavors to turn her from her course. "Out of sight, out of mind," is an old adage; and as the roots of the vines are out of sight, they are too often mostly out of mind; nevertheless, the study of their condition is essential to true principles of practice, and it is fair to presume that a portion of the maladies and diseases that assail the grape have their origin in the root. It is above ground that we see the results of disease, from whatever cause; and were the roots as visible as the leaves, we should perhaps detect the presence of causes, and be enabled to apply the remedy before any effect could be produced. But the roots are out of sight; and if causes indicative of disease exist in the soil, we are ignorant of the fact until advised thereof by mildew, rot, etc., in the leaf and fruit.

Nature, as we have said, makes no mistakes, and all attempts to alter her characteristics almost invariably produce undesirable results. The vine is naturally of a rampant habit, growing luxuriantly and covering a large space, its roots corresponding to its vine; and while we prune

the roots of the pear to balance our desire for a certain form and size of stem and branch, we cut back our vine freely, without any regard to the root. Can any physiologist doubt the result which must sooner or later ensue? Can any one expect a vine perpetually cut back and restricted to a space far below its natural requirements, to become otherwise than plethoric from over-supplies furnished by the unrestricted roots? Can we continue to expect health and freedom from disease when one portion of the plant is permitted to overbalance its opposite? Shall we not have to inaugurate a new system of vine culture, and with it invention of implements for rapid execution of the labors connected therewith?

A LITTLE FUNNY.—In one of the recent Western fruit meetings an essayist commences with saying: "Pruning, according to Dr. Warder, is done in summer for fruit, and in winter for wood." Now, as these principles of practice have been recited long before Dr. Warder was, we can but consider the object of this essayist to amuse himself a little at the expense of the good Doctor, for he, the essayist, is regarded as a well-read man, and, in the Yankee sense, "smart." It is barely possible he, like some others, is disposed to make a god of any one who tickles him under a certain rib.

WASH THE TREES.—Mid-winter is certainly the most leisure time of the fruit-grower, and he should therefore work up his then leisure in the most profitable manner. All fruit-trees are not infested with coccus or bark lice, but all fruit-trees have more or less of foul matters accumulated on and in their bark, and it pays well at this time to go over them with a swab of lye water, sulphur, and lime-wash mixed. The first rain will reduce its strength and at the same time clear it from the tree, taking with it the eggs of insects, moss, etc., and leave the bark clean and pure—open to the action of natural laws of growth.

THE LONGWORTH WINE HOUSE GRAPE PREMIUMS.—Our readers are doubtless all cognizant of the offer made by the Longworth Wine House at Cincinnati—1st, for the best general wine grape of our whole country; 2d, for the best wine grape for the State of Ohio; and 3d, for the best table grape for general purposes in the country, and that men of prominence were by them named to serve as the committee of award.

This circular has been freely published by nearly every agricultural paper in the States, in the simple innocence of their thoughts that it was a liberal item, and deserved commendation. Even our worthy and valued co-operative at Boston gave it favor to the extent of illustrating their premium silver ware. Now, while we favor every advancement of horticultural intelligence, and are ever ready to lend a hand, regardless of cost, to that object which, in its ultimate even, shall serve to advance horticultural progress, we confess our reluctance to say a word of favor to this item. We freely acknowledge we look upon it as chimerical, and like the Greeley prizes, may have originated in a good and benevolent disposition; but its results, like that, will be mere smoke, requiring the awarding committee to either rely upon their former laurels in silence, or else to sustain a discussion which can but result in discomfiture. Without presuming that the Longworth wine house estimated that they would make more than treble the cost of their offer by the gain in publicity, which could not be obtained by paying for advertisements, we can not for a moment believe that the good sense and discriminating knowledge of some members of that house ever for a moment believed there was yet known a single variety of grape to merit any one of their premiums offered. We are certainly very much interested—at least to the number of 10,000 of our readers—in this matter, and shall most cordially hail the hour when it shall be declared, with any possible chance of

being sustained, that there is one superior grape for wine adapted to our whole country—one for all the soils and climates of Ohio, and a table grape for all the land, without regard to soil or climate. After this exposé, it will be useless to bring forward new seedlings.

APPLE FOR PROFIT.—We copy the following from the Alton (Ill.) Horticultural Society's meeting of November 7, 1867:

"J. E. Starr asked what one variety of apple was best for profit on a lease of fifteen years. Several sorts were named on a ballot being had. 'Gilpin' was the first choice, and 'Wine Sap' next."

We hardly dare to make a comment, for we have great belief in progress, but this brings us right back to Cox in 1816—and is only one more proof that "some old things are as good as new."

HARDIHOOD OF PINUS EXCELSA.—Some six years since I planted, for a gentleman now deceased, several of the *pinus excelsa*. The ground is a stiff clay subsoil, only surface-drained; top soil a good clay loam of about eight inches deep. Recently, passing the place, I found every tree in fine condition, apparently healthy, and presenting an appearance fully to bear out its reputation as the most beautiful white pine in existence. These trees have not made long shoots, but the foliage is fully as long as on trees that have made more vigorous growth. I have planted many trees of this variety during the last eight years, and I regret to say, nearly all that have been placed on well-prepared rich soils have been killed by the winter, evidently showing that a moderate slow growth renders this beautiful tree just as hardy as any of the common white pines. F. R. E.

By an advertisement in our columns it will be seen that J. A. Requa has removed his propagating establishment from Amenia, Dutchess Co., N. Y., to Brocton, Chatauque Co., N. Y.

"ALWAYS BE PLANTING A TREE."—Considering the cost, and small amount of labor, there is no one thing that so amply repays as the planting of a tree. Well grown, it becomes always an object of beauty, a source of joy to the owner and his family—a pleasure to visitors and to the residents of a neighborhood—adds an appearance of increased value to the premises—improves the general effect of the scenery—becomes a protection from cold winds—reduces the severity of the temperature—enhances the rental value of a residence—often more admired than the most costly building, and finally can never be viewed without a thought of the supreme creative Power which "doeth all things well."

THE GARDEN.—The first impression on entering a place is given by the appearance of what is generally termed the garden. Not the vegetable ground, but that portion of the ground devoted to the purpose of affording enjoyment and recreation from the labors and cares of life. If it be well furnished and kept, with shrub, tree, and flower, an association of refinement and intellect is at once conveyed; but on the other hand, if it be void of plant or flower, tree or shrub, or having abundance of weeds, it matters not how elaborate the building, or gay and showy the indoor decoration, the impression conveyed is one of sordid, expensive misery.

A few plants of well-selected varieties growing in vigorous health, and arranged with regard to form, color of foliage, etc., to the making of a beautiful picture, is far better than an extensive display of varieties, or a showy mingling of colors, without regard to general effect.

CALCEOLARIAS should now be potted off in good, sharp, sandy loam. Keep them shaded after potting for a couple of weeks; then gradually accustom them to strong light and heat. As they grow, stop them in frequently, to induce a stocky, bushy

plant. One pinch of the thumb and finger is worth two cuttings after they have grown tall and rugged. April is the great month for their growth.

BLIGHT FROM THE ROOTS.—Of late, a theory has been propounded, in certain quarters, that blight in the pear-tree is caused by disease at the root of the tree. If this is founded in truth it would be well to make the following experiment. A few years after planting the young tree (or tree already planted), let there be planted within a foot or so of it two or three seedling pear-trees; and after these have become established (in a year or two), let them be inarched into the main tree. This would give three or four different systems of roots to the same tree, and perhaps would increase the chances of escaping blight as three or four to one, since if one system of roots suffers injury, the others might keep up a healthy vitality. The superior hardiness of such a tree would prove the theory, although the want of benefit might not disprove it. Let amateurs who love to experiment, and who know how to do such things, try it.

W. L. D.

[We have little respect for this theory, although it is true that the root being hidden from our view we have no true opportunity for examining. There can be no objection to the test our correspondent suggests, provided any one is disposed to try it; but we think the components and condition of the soil would act alike on all the added plants or roots.]

HOT-AIR FURNACES are now in general use for heating dwellings both in city and country, and have almost superseded stoves in dwellings of any pretension. The objections hitherto made are now almost completely obviated; and this to a greater extent in the Gothic Furnace manufactured by A. M. Lesley, 605 Sixth Avenue, New York. We have in use one of these heaters in our dwelling, and it gives us pleasure to state that it is entirely free from es-

cape of gas, economical in the consumption of fuel, free from complication, and supplies abundant heat.

PRICES OF FRUITS.—To the grower of fruits it may be of interest to know a little as to the prices that choice apples, pears, etc., are retailed at in the leading fruit stores in New York. Choice specimens of Beurre Bosc Pears, but of only fair medium size, sell at forty cents each. Extra Duchesse d'Angouleme and some Beurre Diels we were asked sixty cents each for, or a dozen, embracing some two or three inferior specimens, at six dollars. Large and fine Baldwin or Tompkins Co. King Apples, one dollar and fifty cents a dozen. Lady Apples, fifty cents a dozen. Catawba and Diana grapes, forty cents a pound. Hot-house grapes, one to one and a half dollars a pound. Nectarines—only a few shown us—at one and a half dollars each.

PRESERVING GRAPES.—*Mr. Editor:* Among the various methods of preserving this valuable fruit during the winter, I have nowhere noticed a plan similar to that pursued by M. M. Dorn, Esq., of this city; and believing it to be original with him, I present it to your readers.

Gather the grapes when fully ripe, and pack in triple layers in oats which have been previously scalded and dried, letting the oats at top and bottom be at least four inches in depth; keep in a cold room. I have seen, on the 15th March, Diana and Concord grapes kept in this way, that appeared as perfect in form and flavor as when packed in the fall, the bloom of the fruit even remaining; and Mr. Dorn assures me that he has had them well preserved for four weeks later.

The custom long prevalent in the West of packing ham, beef, eggs, etc., in this way, suggested to Mr. Dorn the experiment with grapes, resulting, I believe, in a most valuable discovery.

G. P. DELAPLAINE.

MADISON, WIS., Dec. 16, 1867.

BOOK NOTICES.

AMERICAN HORTICULTURAL ANNUAL for 1868, published by Orange Judd & Co., New York. Paper, 50 cts.; cloth, 75 cts.

This is the second issue of this year-book of Horticultural progress for the use of the gardener and fruit-grower. It contains many well-written articles, by some of our well-known nurserymen, pomologists, and florists. The articles, Rhododendrons, by S. B. Parsons; Propagating Evergreens, by J. Hooper; New Pears Tested in 1867, by Marshall P. Wilder; Notes on the Small Fruits in 1867, by A. S. Fuller; and New and Interesting Plants Tested in 1867, are particularly valuable.

SUBURBAN HOMES for City Business Men on the Line of the Erie Railroad.

This is the title of a neat little work of some sixty pages, published by the Erie Railroad Co., designed to call the attention of those in search of country homes to the advantages of the towns and villages lying along the line of their road, as places of residence, many of these villages being really nearer, in point of time, to the business centers of the city than dwellings in the neighborhood of Central Park. The work is compiled by Mr. Henry T. Williams, of the New York *Independent*, who has here brought together many facts and presented them in an interesting and readable form. The work can be obtained at the office of the General Passenger Agent, Erie Building, by those who wish to examine any of the localities described, with a view to purchase property.

ANNUAL REGISTER OF RURAL AFFAIRS. L. Tucker & Son, Albany.

This is the fourteenth year of the publication of this desirable hand-book, which has come to be a standard publication; so much so that the back numbers are still in constant demand. The work contains a complete almanac for the year, and much valuable information on the subjects of agriculture and horticulture. Price 30 cents.

Poultry Department.

CONDUCTED BY A. M. HALSTED.

THE PENNSYLVANIA POULTRY SHOW.

THIS exhibition, held at Philadelphia, Dec. 30th to Jan. 4th, was a most successful one, both financially and otherwise. Although got up with but little time for preparation, the collection of fowls was one that any society, even of a number of years' standing, might be proud of.

Comparisons are invidious, yet, comparisons aside, Pennsylvania certainly *excels* in some varieties. We have never seen finer specimens of Brahmas and Hamburgs than were here exhibited. The former especially stood in the front rank; and had we a "Frederic William" in the poultry kingdom, he certainly could not have much trouble *here* in filling up his ranks with the desired height. We notice the names of Messrs. Tees, Todd, and Brown among the successful competitors in this class. The Silver Spangled Hamburgs exhibited by Mr. Armstrong deserve special notice, and were justly awarded the first premium. Mr. Bosler was also a successful competitor. In Golden Spangled Hamburgs, old birds, Mr. Fable carried off the palm, but was followed very closely by Mr. Armstrong with a coop of this season's chickens. The Cochins were *fair*, but not of noticeable merit. In Grey Dorkings, Mr. Herstine excelled, exhibiting a very handsome trio. Black Spanish were there in goodly numbers and quality, Messrs. Heuston and Upperman carrying off the first prizes for old and young birds, respectively. Mr. Duncan exhibited a very fine coop of Bolton Greys—Mr. Herdegen, White Crested Black Polish—and Mr. Schlem, Silver Spangled Polish, all of which were awarded premiums. In Games, the competition was not severe; only about half a dozen coops were shown, but they made up in

quality what they lacked in quantity—Mr. Armstrong in "Earl Derbys" (Black Breasted Reds), Mr. Ashford in Seftons and Irish Greys, and Mr. Gibbs in other kinds, carrying off the honors.

Mr. Tees seemed to enjoy the honor of showing the smallest as well as the *largest* specimens there, his Black Bantams leading the lilliputians—Mr. Herdegen's Game and Sebright and Messrs. Pavonarius' Japanese Bantams calling for a passing notice.

Mr. Sharpless claims the precedence in Bronze Turkeys with a magnificent pair of 18 months old birds, the cock weighing about 35lbs. Some other coops were exhibited, but were not worthy of special notice.

In the French varieties, Crevecœur, Houdan, and La Fleche, Messrs. Halsted & Co., of this city, were the successful competitors.

Mr. Morris stands first in Bremen Geese, Mr. Jones in Poland Geese, Mr. Sharpless in Rouen Ducks, and Mr. Altemus in Aylesburys; not so much for their several excellences, but for lack of competition, this department being very poorly represented.

In the Pigeon class Mr. Armstrong again takes front rank with his Red and Yellow Tumblers, Mr. Lodge with his Blue Owls, and Mr. Herdegen *goes up head* with all other varieties, including Carriers, Pouters, Turbits, Barbs, Magpies, etc., etc.

There was a very fine show of canaries, mostly Belgian and German varieties—Mr. Prossholtz in the first, and Mr. Himelback in the last, heading the list.

There were many noticeable specimens not entered for competition, among which was a splendid Maltese cat, weighing 18lbs., by Mr. Hankinson; an educated Blue Jay,

which imitated the crowing of a Bantam cock, by Mr. Ott; a cage of California Quails, very pretty, by Mr. Coggins; and numerous other things of interest.

The room was a fine one for the exhibition, and showed the fowls to the best possible advantage. The arrangement, though, was very defective, the different varieties being scattered promiscuously about the room, so that comparison in some of the classes was quite difficult. We are pleased to hear that the Society's treasury has been the gainer, and hope that their future exhibitions may be as successful as the present one.

DUCKS.

Why is it that our farmers, and fanciers, too, almost ignore the good qualities of the duck?

They are no more difficult to rear than chickens, if proper care is taken the first few weeks, and they mature *much* earlier. The *common* duck does not require *ANY* more care; but it is not to these that we specially refer. We do not see the advantage of raising ducks that weigh two or three pounds at maturity, rather than those that will weigh six to eight. And there is just about that difference between the common duck and either the Aylesbury or Rouen varieties. It cost hardly if *any* more to raise an Aylesbury or Rouen than the common mud-puddle variety; and laying beauty (which is a great desideratum with us) aside, there is still the gain in weight as well as the gain in eggs the coming year.

Either of the above varieties is desirable, and the choice may be said to lie almost with one's fancy. Both are excellent layers, frequently commencing to lay in the fall and continuing until cold weather, recommencing in February or March and not ceasing until July or August, and mature at about the same age, reaching about the same weight, which *sometimes* attains 18 to 19lbs per pair. This weight, though, is *very rare*.

It seems to be the impression with many, that ducks can not be kept except with a pond or stream on the premises. But this is a mistaken notion. True, a running stream, or when that is not to be had, a pond of water, is a great help, but it is not a *necessity*. We have known fine broods raised with a large tub or box sunk into the ground and filled daily with fresh water. A good way to do this is to excavate the ground under the tub to the depth of eighteen inches or two feet, and fill the hole up with stones; have a hole and plug right over the excavation, and the water will run off easily and freely, and not keep the ground around the tub continually muddy.

"But they eat so much," is the reply; "why, half a dozen ducks will eat a half bushel of corn a day." Now, reader, did you ever compare *critically* the amount consumed respectively by a duck and a hen? If not, do so, and you may discover less difference than you persuaded yourself there was. The idea of ducks eating so much is a good deal like the Dutchman's pig. Hans had von leetle pig, no bigger dan von cat. He give ter leetle pig von pail of swill; piggy eats ter swill all up; den he puts him in ter pail, and he no fill ter pail half full.

FOOD FOR CHICKENS.—A writer recommends for chickens, for the first week after hatching, hard-boiled eggs, to be given, chopped fine, at least twice a day, wheat steeped in milk, and coarse Indian meal, bread crumbs, etc. A change of food is necessary twice a week, substituting cracked corn for wheat.

THE PRESERVATION OF EGGS.—A writer in the *Farm and Fireside* recommends the dissolving of gum shellac in alcohol, when the mixture may be applied with a common paint-brush. When dry, pack in bran, points downward. Eggs so preserved will keep a very long time. When about to be used, the varnish may be washed off.

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POMOLOGICAL.

WITH no disposition to criticise, or presumption to knowledge, I unhesitatingly pronounce the whole of pomological literature, at this present time, completely incomplete, or, in other and more common words, a "perfect muddle." We have volume after volume, enumerative and descriptive of numberless varieties, and yet the most perfect pomologist is unable to identify any variety, with which he is not familiar, from any description or test, classification or systematic arrangement published. Over two thousand names are applied as belonging to distinct varieties of apples; the subject is multiplied in each new edition or book published, but as I believe really without any definite knowledge on the part of the describer as to whether the variety he describes is a new and distinct sort, or one already known some two hundred years ago.

Since the publication of Coxe's work in 1817, no one book has so completely met the subject of varieties with tests and illustrations enabling the uninitiated to identify and select, as did that publication. Kenrick was but a rehash of English works, with little or no knowledge personally of varieties, and with no disposition whatever to step out of an old beaten track. The

little work of Manning, good in its way, yet served as a trifle only beyond a catalogue. Downing's was an advance, but not what that author was capable of or would have performed had he lived twenty years longer. Nevertheless it was an advance; for while the author saw at a glance the utter uselessness of the old German classifications to the general reader, or even toward enabling pomologists to identify sorts, he yet felt that a certain credit should be given to those who had labored before him, and that as an aid greater than all others in the identification, local names or synonyms were essential. Thomas' work was, strictly, no fruit book. It combined a few sorts of fruits with a great deal of condensed practical matter relative to the profit and values and modes of fruit-growing, and was in that respect a really valuable work. Barry's, again, was no fruit book in itself, so far as varieties, nomenclature, or identification were concerned, for no attempt was made to classify, arrange, or describe fruits beyond what had already been done; but it was, and is to this day, an exceedingly valuable work, covering a field of culture in nursery and systematic training in orchard which the people want, and can not find outside of it.

Elliott's book was arranged on an entire new order, viz., a classification of varieties as to their relative values; and because of its author assuming to place many varieties in his third, or unworthy, class, which were then being popularly grown, and giving to the front rank some varieties not generally known, his work was discountenanced by all tree growers and dealers, because it affected their immediate interests. As a work enumerative and descriptive of fruits, however, it was in advance of any previous one, and to this day covers many varieties not found in other works.

Coles' Fruit Book followed as it were inside of an old track, adapting itself to a few localities in New England, but covering no ground which was not covered; or embracing items of instruction not to be found in any yearly volume of a good horticultural journal.

Hooper's book is the veriest compilation ever foisted on a public anxious for information, and ready and willing to pay therefor.

Warder has issued a work on apples alone, and has adopted, with some changes, pretty much the mysticism of the old German authors in his classification, abandoning most, or giving very few, of the local names.

White's "Gardening for the South," without any attempt at originality in its order, sought only to enumerate and describe, according to precedent, such varieties as were valuable there, and in that gave us our first knowledge of many Southern fruits which otherwise would to this day have been unknown.

So much for the fruit books; knowledge

obtained from which is about like that of doctrines of religion—all based on a good cause, but varying according as man's fancy, knowledge, or skill may direct, but save in the main object at end, with no definite unity.

To what use, I ask, is all this compilation without unity of system? Is there no definite rule which shall govern? Is there no system of arrangement, description, classification, etc., which is superior and shall rule? Is there no guide for the introduction or raising of fruits beyond the fancy or knowledge of him who has seen or grown them? Our pomologists and societies are allowing descriptions of fruits to appear upon their records from year to year, ninety-five out of every hundred of which are of no value as compared with the old known sorts. Ought this to be? Ought not our leading men and our pomological societies, when a fruit is brought before them, to say at once, without fear or favor, their actual judgment of such fruit; and if it is only moderately good, although highly extolled by its originator or some one who has trees or plants to sell, say that it should at once go on record and be there killed? I hope we shall some time arrive at a point when we shall have a book giving us only full and perfect descriptions of such fruits as the author in honesty and truth believes are really valuable, while of those only "good," or even "very good," he will, while enumerating and describing, condense into as few words as possible, and yet give us the general contour of the fruit, retaining also all the local names or synonyms.

A. THORN.

CHENANGO STRAWBERRY.—Specimens of the Chenango Strawberry apple have been sent us from several sources. It is an apple of more delicacy than the Late or Autumn Strawberry, more conical in form, and often, if not always, angular, or having its sides

unequal. Color, a clear lemon yellow ground, mostly overspread with a bright rich clear red and with scattered yellow dots. We regard this as one of the very best early autumn or late summer varieties.

MOUNT VERNON PEAR.

A CHANCE seedling which originated on the grounds of Honorable Samuel Walker, of Roxbury, Mass., and by him named Mt. Vernon. Specimens from which these outlines and descriptions were made came from W. S. Little, Esq., Rochester, N. Y.

Tree, vigorous, an early bearer; wood, resembling Flemish Beauty in color; buds,

more prominent, and forming a symmetrical tree, producing its fruit in clusters.

Fruit, generally of full medium size, form varying, but as a rule resembling our largest outline, being globular, pyriform, and oblique; skin, smooth, but not glossy smooth; color, a rich cinnamon russet brown; stem, short, enlarged, and wrin-

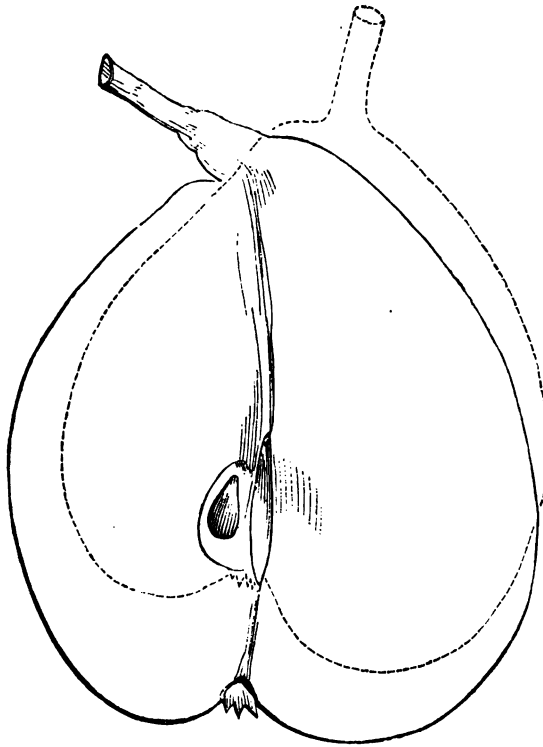


FIG. 31.—*Mount Vernon Pear.*

kled at junction with fruit. Occasional specimens are nearly globular, having the stem set with a slight depression. Calyx, small, with short open segments; some specimens have but a trace of calyx; basin, smooth, even, varying in depth; flesh, yellowish, granulated, juicy, crisp, melting,

sweet cinnamon aroma, almost if not quite "best." Season, December.

This is not strictly a new pear to the public, although it has never been disseminated. It has been before the Massachusetts Horticultural Society from time to time, and received favor.

HINE GRAPE.

BY F. R. ELLIOTT.

THIS is a new variety sent me by Charles Carpenter, Esq., of Kelley Island, Ohio. It was shown at the Ohio State Fair, Oct., 1867, by D. C. Richmond, Esq., as a seedling; but the fruit was from a vine grown by Mr. Carpenter. The history is given as follows by our correspondent, Jason Brown, Esq., of Put-in-Bay, Ohio.

"PUT-IN-BAY, Nov. 25th, '67.

"F. R. ELLIOTT, Esq.—*Dear Sir*: The Hine grape is a seedling raised by me in 1852, the fruit of which was exhibited at the State Fair by Mr. Richmond. Mr. C. Carpenter, of Kelley's Island, tells me it took the first premium as an unnamed seedling. Perhaps the grape will not deserve a name. I have never exhibited this grape at any fair or fruit show, and did not know that it would be at the State Fair till Mr. Carpenter told me a few days since. I will give a short history of it, to prevent mistakes. In the fall of 1851 I noticed in the vineyard of Mr. Daniel Hine, of Talmadge, Summit Co., two bunches of unripe [in September] Catawba and Isabella grapes growing so closely together as to make it quite probable that by sowing the seed I might get a cross of the two. I told Mr. Hine that if he would save me the seed, I would give the best seedling I got from them, his name. The grape you saw at the State Fair is the best one I raised, and was named Hine. About four years ago I gave Mr. Carpenter

a few cuttings of the Hine for a few cuttings of his seedlings. I have kept still about this grape because I am not willing that any new variety of fruit I may get from seed should go out, without being fairly tested in different localities, and its *faults* fairly shown up as well as its good qualities. I am somewhat partial to this seedling, and have a high opinion of it. The fruit began to color and was sweet before the Delaware this season. Here the wood ripens well, and is hardy and healthy so far with me. If the Hine grape will not *stand* upon its own merits, I want it to *fall*.

Very respectfully yours,

"JASON BROWN."

Bunch, large, compact, somewhat shouldered; berries, medium, irregular in size, round, very dark rich claret brown, with a purplish bloom; skin, of medium thickness, not harsh; flesh, juicy, rich, sweet, and almost without pulp, very delicate, slightly of Catawba character in richness, but not with as much or perhaps any of its aroma; seeds, oval, pointed, flattened on one side, two in a berry; wood, of medium size; canes, reddish brown, very short-jointed; buds, prominent; leaf, large, thick, whitish underneath, light rich green above.

The promise of this grape is very great; but of course it must be grown and ripened in different locations and soils before the public can have any confidence in it as a variety for general cultivation.

SWEET BELLEFLEUR.—We have received samples of this fine apple from central Ohio. It was first described, and its cultivation advised, by that good pomologist and friend to man A. H. Ernst, deceased.

The fruit is large, much resembling in outward appearance the old yellow Bellefleur, but the flesh is pleasant, sweet, juicy, and rich.



FIG. 32.—*The Hine Grape.*

A RARE BUT BEAUTIFUL PINE.

In the grounds of Joseph Perkins, Esq., of Cleveland, Ohio, is a beautiful pine, of which the accompanying is a pretty good illustration on a small scale. The name under which it was received has been lost, and I am unable to say clearly what it is, but believe it the *pinus bruttia*, or Calabrian pine. It is certainly a very beautiful

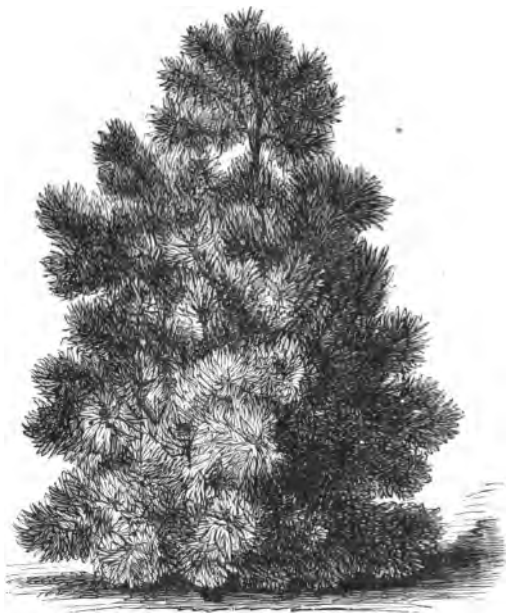


FIG. 33.—*A Rare but Beautiful Pine.*

pine, with long, wavy leaves, longer than the Corsican or *laricio*, and of a green, brighter and more yellowish, like the Austrian (*Austriaca*). The tree stands in low ground, fully exposed, and has proved perfectly hardy. F. R. E.



LILIES.—We notice our dealers in these bulbs are offering them at prices comparatively cheap with former years, and we again say to our readers, do not fail of having a bed of lilies. Make the ground rich with well-rotted manure, and at least two feet deep; then, when planting the bulb, surround it with clean sand an inch thick, below and above, and over it good strong soil, free from any undecomposed manure. Animal or vegetable matter, in an undecomposed state, when in immediate connection with the bulb, induces rot and decay.

JAPAN PEAR.

THIS is a singular fruit, of no value as a dessert sort, but exceedingly valuable as a cooking pear, having very much of a quince-like flavor. It can be kept long into winter, with no more trouble than potatoes; and like long-keeping winter apples, brought forward whenever a dish of fresh stewed pear fruit is desired. For preserving, it is also valuable on account of its highly aromatic character, which can hardly be submerged, even by use of a large amount of sugar.

Its origin was by Gideon Ross, of Westfield, N. J., from seeds found in the trunk

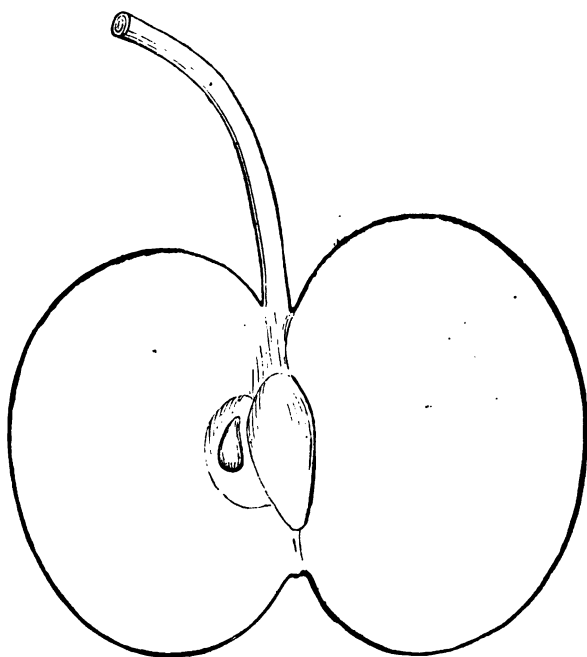


FIG. 84.—*Japan Pear.*

of a nephew who died on his way home from Japan. It bears early and abundantly, and the tree is a strong grower, with broad, nearly heart-shaped, foliage.

Description.—Fruit, medium, roundish oblate; skin, quite rough; color, reddish russet yellow, with large light colored

specks; stalk, long and stout; cavity, open, deep; calyx, only marked; basin, open, broad, deep; flesh, coarse, gritty, with consistence much like a quince and somewhat of its aroma; core, with an open center. October to February.

BEST SIX APPLES FOR IOWA.—Jno. Edgerton, of Coal Creek, Iowa, says: "The best six varieties of winter apples for that

section are, Willow Twig, Ben Davis, Rawles' Janet, Jonathan, Domine, and Winesap."

DON'T MISTAKE THE CAUSES.

BY PETER HENDERSON.

MANY young gardeners and amateurs flounder befogged, attributing failure of crops in the garden, or want of health of plants in the green-house, to bad seeds, uncongenial soil, or fertilizers, when it is much oftener the case that the cause is of a totally different nature, and entirely within their control. A temperature at which seeds are sown and plants grown must be congenial to the nature of the variety, else success can not follow. In a temperature at which a portulacca will vigorously germinate, a pansy seed would lie dormant, or at least show a sickly existence, and *vice versa*. Nearly half of the Lima beans sown annually, perish by being sown from two to three weeks too early, by the impatience of our embryo horticulturists. On the other hand, the colder blooded carrot or turnip seed all but refuse to germinate in the sultry days of July. Seeds of calceolarias, cinerarias, Chinese primroses, and pansies will germinate more freely and make better plants by delaying the sowing until the middle of September than if sown earlier. Many failures are attributable to want of knowledge of this fact, and without question laid to the charge of the seedsman.

The same necessity of accommodating the temperature to the nature of a matured plant exists even to a greater extent than it does in the seed; and one of the main causes of want of success in cultivating plants under glass is a want of knowledge, or carelessness in keeping a temperature unsuited to the growth of the plants. In ordinary green-house collections the fault is oftener in the temperature being kept too high than too low, for it is much easier—requiring far less watchfulness by the person in charge to keep up a high temperature. The injury done by this is

gradual and will not, like the action of frost on the plants, shew in the morning. In consequence of this, we often see the temperature of green-houses containing camellias, azaleas, pelargoniums, carnations, etc., etc., sweltering under a continued night temperature of 60° or 65°, when their nature demanded twenty degrees lower.

It is true, we too often see collections of hot-house and green-house plants intermingled, and attempts made to grow them, which of necessity result in failure to one or other. The temperature to grow in healthy condition coleus, bouvardia, or poinsettia (hot-house plants) would not be likely to continue long in a healthy state verbenas, carnations, or geraniums. The same rules follow as to the propagating-house, showing the necessity, even in a greater degree, of the strict requirements of their different natures; coleus, bouvardia, begonia, and lantana root in a bottom heat of 75°, with atmospheric temperature of 65°, in ten days; at twenty degrees lower they will not root at all, and will perish. And although cuttings of plants of a more hardy nature will root in some conditions of growth at this temperature, yet we prefer, to insure plants of vigorous health, verbenas, carnations, geraniums, roses, etc., to be rooted in a temperature at least fifteen degrees lower both in the bottom heat and temperature of the house.

The subject is one embracing so many varieties and different conditions of organism at the different seasons of growth, that it is impossible to convey to the unexperienced what these varieties and conditions are; but the object of this article is to impress upon your young or inexperienced readers what I have long believed to be an important truth—that the supplying

the proper conditions of temperature to plants under glass, according to their different natures and conditions, has as much, or more, to do with their welfare than any other cause; and that often when ascribing the unhealthy state of a plant to uncongenial soil, or defective drainage, or the

"damping off" of some favorite cutting to the way it was cut or the sand it was put in, the true and sole cause was nothing more than condemning them to an atmosphere uncongenial to their nature.

SOUTH BERGEN, N. J., Feb. 10, 1868.

BEURRE D'AVOINE.

FRUIT: size, medium; color, pale rich yellow with fine dull russet dots and rough fine russet marblings, especially around the stem and calyx; stem, varying in length,

usually, as in our drawing, planted in a cavity, narrow and furrowed; flesh, yellowish white, fine grained, juicy, melting almost buttery, with a sweet vinous aroma

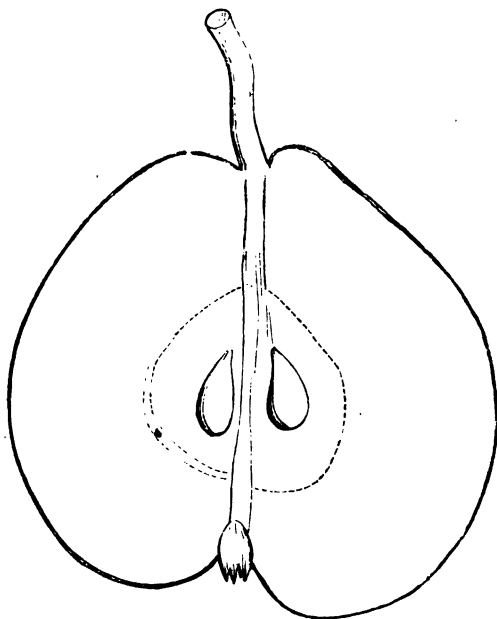


FIG. 35.—*Beurre D'Avoine.*

and taste; calyx, with long segment nearly closed; basin, narrow, rather deep, and with a few broad furrows; core, medium;

seeds, large obovate sharply acute pyriform. Season, November to January or early winter.

Thin out the old wood of currant and gooseberry bushes, and thus improve the

size and quality of the fruit in future seasons.

PROPAGATING PLANTS.

BY A. S. FULLER.

INFLUENCE OF STOCK ON THE GRAFT.

THAT the stock upon which a graft is inserted has an influence upon its future growth, is well known. If it were not so, then grafting, budding, and similar modes of propagating plants would not have been discovered, nor the beneficial results of these operations been enjoyed by mankind. But merely supporting the graft or furnishing it with the required amount of sustenance, does not convey the full meaning of the term *influence* as generally understood in connection with this subject.

The stock not only acts as a medium through which the graft obtains sustenance from the earth, but it in a great measure imparts its own characteristics to it; and it is thus we change the giant into a dwarf, the slow growing plant into a rapid, and many other variations from the natural habits of plants, simply through the influence of the stock on the graft.

We may not be able in every instance to determine the true cause of certain variations which may appear to be antagonistic with what we call natural laws, still, for all practical purposes, our knowledge of this subject is sufficient to enable us in many instances to so change natural products that their value to us is increased many, many fold.

The common method of producing dwarf trees is one of the most familiar instances of the influence of the stock on the graft. But there is, however, a too general inclination on the part of the public to misapply the term dwarf, as many suppose that it is nearly, if not quite, synonymous with debility or stunted growth. This idea is an erroneous conclusion, for in many instances what are called dwarf trees are equal to and often more vigorous than standards. For instance,

we will select two seedling stocks, one shall be the Mahaleb Cherry and the other the Mazzard; both shall be of the same size and of equal vigor. Upon these we will insert buds of the May Duke Cherry, or any other variety. Now, the chances are in favor of the bud on the Mahaleb stock making the most rapid growth for the first one or two years, and still the Mahaleb is considered to be one of the best stocks on which to dwarf the cherry. Now, the Mahaleb stock does not lessen the vigor of the tree, but merely imparts to the graft its peculiar habit of growing and spreading, and we are obliged to allow and assist the tree to grow in this form, or it will surely become feeble and perish. The bud inserted upon the Mazzard stock will shoot up into a tree, assuming its natural form, but the influence of the stock will be to make it grow pyramidal and quite tall, because that is the natural habit of the Mazzard Cherry.

From my own experience, I conclude the same rule holds good with many other dwarf stocks, and I have, as a general thing, secured a larger growth of the pear for the first two or three years, and even longer with proper care, on the quince than upon the pear stock. The influence of these stocks is shown by imparting their peculiar form of growth to the graft, early fruiting, etc., more than checking their vigor. By these remarks, we wish to be understood as only referring to stocks upon which the graft readily unites. If we undertake to trim up our dwarf trees and make standards of them, we soon discover our mistake; and I once knew of an instance where ten thousand cherry-trees on Mahaleb stocks were destroyed in endeavoring to change them from dwarfs into standards. In this instance, the first sign of failure appear-

ed upon the upper portion of the stem and among the branches in the form of a species of fungus or blight, which killed the upper portion of the tree, and at the same time young, vigorous branches were produced in abundance on the lower portion of the stem; and thus the tree assumed its natural low growing or dwarfish habit.

In some instances, we use stocks merely as a temporary support to the graft, not expecting that a permanent union will be formed, as in grafting the tree pæonia upon the herbaceous, or the stem of one dahlia upon the tubers of another. But with trees we usually expect permanency, and therefore select stocks that shall not only support the graft, but develop those particular characteristics which are most desired.

The chief point of influence of the stock on the graft may be stated as follows: 1st. The stock gathers the crude materials for the support of the graft from the soil, and in doing so it may furnish it in such quantities as to produce rapid growth, or the reverse.

2d. Its tendency is to impart its own habit of growth to the graft. Early or late maturity and productiveness being characteristics of different varieties, the stock will therefore hasten or delay fruiting.

3d. One species of stock will extract from the soil the peculiar ingredients which are necessary to support the graft, while another will not, consequently a variety of species of fruit may fail upon one stock and succeed upon another in the same soil and locality.

4th. The hardiness of a tree is but slightly changed by the stock, except as its growth is influenced, to mature early or late in the season.

5th. The quality of the fruit is occasionally influenced by the stock; but the true cause of this is not yet sufficiently understood to allow of positive rules being given by which it may be avoided. Size of the fruit is also considerably changed by the use of different stocks. I know of two

Bartlett pear-trees of the same age and standing side by side, and both apparently of equal vigor, still for ten years one has produced very large fruit and the other small. The number of specimens upon each tree being reduced to an equal number, the difference in size was still the same. With such examples before us we can not but conclude that the stock in some instances does exert sufficient influence to change the size of the fruit.

6th. The stock will not only impart vigor to the grafts, but will also transmit diseases. It is therefore just as important to avoid the one as to endeavor to secure the other.

INFLUENCE OF GRAFT ON STOCK.

The influence of the graft on the stock is seldom referred to in our horticultural works.

Downing says: "The influence of the graft on the stock seems scarcely to extend beyond the power of communicating disease." But if we have discovered this much, it proves that there is an influence, and if it is sufficiently potent to "communicate disease," then it should also be powerful enough to impart other characteristics as well. Mr. J. J. Thomas, in his "American Fruit Culturist," edition of 1849, makes a few remarks upon this point, which I think are worthy of notice. He says: "The extension of the wood of the stock by successive depositions from the leaves of the graft and through the cellular system of the bark, so as to preserve the strict specific identity of the wood of the former, is familiar to every practical cultivator. The same seedling cherry stocks, grafted with sorts of different degrees of vigor, soon vary in amount and size of the fibrous roots. Trees of the Imperial Gage and Jefferson Plum, a few feet in height, when budded on the wild plum, were found to have only half the amount of roots possessed by the unbudded stock of the same age."

Every nurseryman must have observed

that some varieties of the pear have far more fibrous roots than others. So marked is the difference, that the common laborers in the nursery soon learn to distinguish them, and will proceed quite differently in digging the trees of each variety, knowing that one has few long, naked roots, while others have short and numerous fibrous ones. These various forms of roots can not be satisfactorily accounted for in any other way but to ascribe the cause to the influence of the graft. If we take a seedling apple-tree of one or two years old and divide the root into two sections, upon one of which we insert a cion of the Newtown Pippin and on the other one of the Northern Spy, and then plant them both in exactly the same soil and cultivate alike, when, after three or four years, we dig them up, the roots will have a decidedly different appearance. Still, with all the influence which the cion has had upon the roots, changing their appearance and form of growth, if cuttings are taken from these roots and allowed to grow up into trees and bear fruit, they will produce the same sort in both instances. The vigorous growth of root depends as much upon the stems and branches as the latter does upon the root. If we graft a weak-growing variety upon a strong, vigorous one, there is no certainty that the stock will be able to overpower the inherent feebleness of the cion and keep it growing vigorously for any considerable length of time. The cause of this, in many instances, is probably owing to the fact, that the leaves on the graft are not capable of assimilating the sap as rapidly as is requisite for the health and growth of the entire plant. Roots gather the crude materials which make up

the bulk of the plant from the soil, but they can not grow unless the leaves return to them the requisite materials for their extension. Now, if the leaves are not capable of assimilating all the materials that the roots have the power of absorbing from the soil, it must be apparent that there will be at least a partial check to the circulation of sap, consequently a diminution of growth. A few years since I had an opportunity of witnessing a singular effect of leaves on growth. An old Easter Beurre pear had been allowed to over-bear, and, consequently, had become very much enfeebled in growth, so much so that it did not make an inch of growth upon any one of its branches. One of the small branches was cut off and a cion from a Vicar of Winkfield placed upon it. The graft made a growth of two feet the first season; the next season the graft not only continued its rapid growth, but the entire tree appeared to revive and send out new and vigorous shoots. My theory in this case may not be a correct one, but I believe that the cause of this change in the old tree was owing to the demand which the new graft made upon the roots for plant-food; they, in return, received materials for their extension. The supply which was gathered and sent forward not being all absorbed by the graft, was forced into the old branches, increasing the size of their leaves, thereby causing a reaction in the entire tree. Healthy leaves indicate healthy growth, and new leaves cause the production of new roots, and these in return furnish the materials for continued growth, and thus a reciprocal action is constantly going on between root and branches.

PEACH ON PLUM.—Wherever the peach does not succeed well, planted upon its roots, because of the soil being too stiff, clayey, or wet, it will be found that if the peach be budded on the plum it will

thrive well, and give good crops of fruit, and, at the same time, give to the tree more hardihood to endure extreme changes of temperature.

SEEDLING DAHLIAS

THE growing of dahlias from seed is considered usually very precarious, as regards the product of well-formed compact flowers. I have known a grower with twenty-five hundred seedlings obtain but one single flower of excellence; but the result I am now about to relate is of a very

different character. In the fall of 1866 Mrs. Oliver Alger, Cleveland, Ohio, selected seed with great care—she being a lover and amateur grower of flowers—from some of the best dahlias in her garden. Early in the spring of '67 these seeds were sown in pots in the hot-bed frame, and about the



FIG. 35.—*Seedling Dahlia.*

1st of June transplanted to the open ground. The result was, that when they came to flower, she had but two imperfect flowers, or, in other words, but two of the plants gave blooms that would not command the eye of a florist as readily as two thirds of the varieties under name and cul-

tivation. The variety of colors was from a dark rich maroon red to a light sulphur yellow, and the drawing I give is not one of the best, nor the poorest, but an average of the perfection and form which the collection embraced.

F. R. E.

PROPAGATE cuttings of verbenas, petunias, carnations, and other plants wanted for bedding out in the garden. Cuttings

put in now will make fine strong plants by the time for planting out.

THE CARBOU STIFFENER.

BY E. FERRAND, DETROIT, MICHIGAN.

READING in the February number of the HORTICULTURIST the article on Stretching Wires, by "Horticola," reminded me that in a former number, speaking of dwarf apple-trees grown as edging, I promised to describe an instrument, then newly invented, in use in France, for stiffening



FIG. 36.

wire trellises. The accompanying drawing gives a correct idea of this useful thing, though it is generally three times the size here represented. It consists of a small strip of iron a 10th of an inch thick, $\frac{3}{4}$ inch wide, to one end of which—a little wider than the rest—is fastened a rivet (A), with its

head $\frac{3}{4}$ inch in diameter; said rivet is pierced through by a hole, into which the wire is passed. The wire being fastened at both ends, all it requires to tighten it is to wind the stiffener around until the wire is sufficiently stiff, and then you make the stiffener fast by just inserting the wire into that little notch (B) at the small end of the tightener, which is bent to a straight angle, the wire itself acting as a spring. It is very easy when the wire becomes slack by the effect of heat or otherwise to give the tightener half a turn, which is all that is necessary. The above instrument was invented by Mr. Carbou, a French gardener, and is very simple and cheap, and never gets out of order.

It is manufactured in France at prices varying from \$3 to \$10 per hundred, according to size. I hope somebody will manufacture it for us here.

THEORY, PRACTICE, SCIENCE.

BY JOHN ELLIS.

WHEN a scientific mind announces a new discovery and affirms it a truth, it is generally because of results eliminated in accordance with laws that prove it to be so through the direct application of a test. Astronomical theory taught, and is teaching, that this earth, now partially solid, was once in so fine an ethereal state that man's senses (if he then existed) could not have revealed it to him; but through the process of cooling and condensation rock and earth ultimately were formed. The chemist says that if this theory be a truth, I can and will prove or disprove it; so he puts the rock into the retort, and be-

hold he finds nothing but gases! How important it is that all theories should be reduced to practice; but how much easier it is to say IMPOSSIBLE than it is to reconstruct our own dear cherished theories in conformity with practical science! "We have taught," says the *Gardener's Monthly*, "that the roots of a vine never extend beyond the distance its branches are allowed to go;" "that when we cut away the vine, the roots die away in proportion;" or, as we suppose the writer intended to have said, according to the cutting away of the branches or wood, so in proportion do the roots of the vine die. Reader, is

this a truth or a fallacy? Have you any practical experience on this direct question? Did you ever *think* about this? Did you ever cut a plant back, and if so, for what purpose? You certainly have planted vines? "Yes." "And cut them back either before or after that operation. Well, and what did you cut them back for? Why, to strengthen the young plant; and if all the wood was cut away excepting perhaps a base bud or two, you have found the young plant was still more benefited?" "Most certainly." "Now, what is the science or philosophy of this operation? Why, this: that the young roots are not strong nor numerous enough to extract from mother earth fluid matter sufficient to carry on and upward into the woody tissue of the young vine to sustain and develop the foliage as fast as the leaves can convert it into sap; or, in other words, the process of elaboration or chemical transmutation in foliage action is too absorbing for the supply from the roots, and consequently a partial vacuum is formed between leaves and roots, and the consequence is stagnation in the growth. Then, as you 'cut away the vine,' did you find the 'roots die in proportion?" "Certainly *not*; but, on the contrary, they increased a hundred-fold." "Very well; then we shall call this practical science of the right kind. Now, from this small portion of practical knowledge, you with your young vines must certainly have gained some practical experience?" "Yes." "Now, in what way has this much of experience benefited you with your young vines in the next season?" "Ah, sir, much. My vines the past season made a fine growth; they grew clean away up to the tops of the rafters, which are eighteen feet long; and in the month of November (not September) I cut them down to less than one third of their whole length." "But do you not think that you did very wrong, knowing that it has been taught that in proportion as the wood is cut away, so in proportion the poor roots die away?"

"If fine wood, nearly double the strength it was the past season, with some splendid bunches of grapes, is proof that the roots really did die, why, then, all I want is just the same kind of proof as long as ever I shall grow a vine." "Then am I to infer that you annually prune away the wood?" "Most distinctly." "But you can not 'prune away' when your vines have reached the top of the rafter, or you would not fruit *all the way up*?" "Ah! that is just where the secret lies, and that is just where and when your roots begin to die. Cease to have wood to 'prune away,' and just in the proportion as you *don't* 'prune away' plenty of wood, so in that proportion your vine roots most assuredly will die." "But *how* do you manage to have plenty of wood to 'prune away?" "Well, sir, this is hardly fair—in fact, it is quite a secret; indeed, I am just thinking about taking out a patent for the process; but then, the more we talk about an invention we are about to get patented, the greater is the proof established by having a number of witnesses who can vouch in behalf of the originator, should the case be contested. So I will tell you how always to have plenty of wood to cut away. Never fruit your vines more than two thirds their length, and cut away the wood from that given point every season." "And the poor little roots won't really die *one third*, as this is the proportion cut away of the wood?" "Not a bit of it." "Nor the new young roots go precisely in the track where the other old roots have traveled and absorbed all the nourishing elements out of the soil?" "You rather surprise me with this query, as I can not see by what law new roots are constrained to pass through an identical portion of soil of which the older roots have previously absorbed all its constituent elements of plant-food. Roots of plants generally travel to where they are attracted, and the elements of soil thus magnetized possess the necessary food constituents." "But why do you speak of soils being 'magnetizing' or

'attractive?'" "Well, then, perhaps the term *affinity* may suit you better; but, to me, *affinity* seems to belong to a low order of intelligence; for this *affinity* certainly manifests traits in its character of *like* and *dis-liking* things. Kerosene oil will instantly kill mealy bug, but the oil alone is too strong for most mealy-bug-plants, and we can not weaken it with water because the kerosene *don't like* the water; but if we add some soap, we then throw dust into the eyes of kerosene, and then, being blinded, it can not tell one from the other. We cheat him into a matrimonial alliance for our own benefit. A great many things are done this way, using soap and coal dust.

"There stands a lophospermum, you see, growing in *that* pot. Two feet from it, you will observe, stands a small wooden water-tank, kept full for ordinary use. Now, observe the roots of that plant, and you see they have come through the hole in the bottom of the pot, and have traveled in a direct line *two feet*, and reached the tank of water, pierced through it where the planks are nailed together, and have gained full possession of the water! This is an evidence of attraction or the magnetic power of the soil,—the one positive, the other negative, its polarity mutably conditioned to meet the condition of and reverse the aqueous superfluity of either soil or roots. Now, 'exhausted' soils seem to imply a soil in *statu quo*; but this is not the case, for there is not one moment in the life of soils but what they are continually undergoing chemical transmutations, and streaming forth vegetable life-constituents in a wonderful manner and to a most wonderful extent, and these transmutations are more multitudinous when in conjunction with root action; for it is then that the vegetable and mineral substances in solution through heat, carbonic acid, etc., yield to the roots the greatest amount of food, as in like manner does the root yield to the soil and the latter to the atmosphere, under a *low* temperature, the

very constituents of its vegetable organism in icy crystals and in perfect representation of that identity from whence evolved.

"Now, the greater the activity of the roots, the greater and quicker is the circulation of the fluids. Activity of root action is dependent on the leaves being largely and fully developed, and these again are dependent on the amount of sap fluid being carried up and through the plant organism, and *above* its fruiting members in the form of, first, large sappy growth, and secondly, the solidification of every molecular particle throughout all the ramifications of the plant organism, *fruit* and all." "Pray, through what agency do you attribute the perfecting of the vine's system and its fruit? is it not 'healthy leaves' rather than 'sun-light?'" "The theorist who asserts that the *ripening* of the vine's fruit is effected by 'healthy leaves,' and *not* by 'sun-light,' can not prove any such assertion. Let the dogma be issued forth, if you please, from the highest throne of botanical science; for with equal propriety may the animal physiologist assert that the human system is developed and perfected through the agency of the stomach, and *not* through the air we breathe. Where would 'healthy leaves' come from were it not for the direct rays of sun-light? No such leaves would ever be found, and we could as reasonably expect to find them in a darkened cellar as in a glass structure, if such statements as the above were correct, or, indeed, even likely to be logically correct. The student of such a theory would require his intellect opened somewhat by a reasonable argument, *à priori* and *à posteriori*."

There are vines in Texas, Florida, etc., where a system of pruning is adopted of cutting back the annual growth to within a few buds of where the growth was projected, and the practice continued for so many years that the trunk of the vine is often over three feet in diameter. If the theory is correct, that "in proportion as we cut away the vine, the roots die away,"

the plants in question could not have lived long enough to have formed such immense trunks. Again, what is the experience of all practical nurserymen or fruit-tree growers? Why, that when a plant has become stunted in growth, it is cut clean back, which in almost all cases renews the plant's energy.

In the section of country where we reside, the yellow locust abounds most plentifully. After the trees have well developed themselves into pretty good timber, the tops will die off, and the tree would gradually die altogether but for the preventive put into practice, which is, to saw off the heads of the main branches, when the trees shoot out again into luxurious growth, and continue to do so for a number of years; and we have seen the "rings" in a transverse section of the wood, which plainly demonstrate the time when the lopping off the branches was effected, by observing the great difference in the diametrical proportions of the rings. Such evidence as this certainly does not prove that cutting back the wood destroys the roots. Nature prunes and shortens back the branches of vines. Look at the grapevine in a state of nature, and how do we find it? thus: the ends of the annual growths not being perfectly ripened are destroyed by frost to a certain extent *backward*, or to a point where the wood has been sufficiently ripened. Then, if we watch this piece of wood that has been so killed at the end, we also find that this same branch, in the season of growth, does not burst *all* its buds, but that a number of them near the base of the branch do not

burst at all. This is the condition of the vine in a state of nature; and from the facts demonstrated we establish a system of pruning as nearly allied to nature as possible, but in which system we try, and do obviate what may be termed the *objectionable* in the *natural*, *i. e.*, the dying away of the ends of shoots and the non-bursting of the whole of the buds which are left. When considering the possibility of vine roots not being able to reach out into the soil to a greater extent than its branches are grown inside a vinery, we are reminded of an instance of a very remarkable kind in England, the seat of Robert Vernon, Esq., *Wantage*, in Berkshire, and with whom we lived as gardener. In those gardens was a range of graperies, a large culinary garden in front with a gentle slope to the south, the foot of which resting at the edge of an extensive artificial lake. All parts of the garden that were not in crops were trenched every fall two feet deep, and in two years, by the alteration of the winter crops, the whole garden was put through the trenching operation. In the vine borders no roots were found, nor indeed were any ever recognized, as far as we were cognizant, in the garden soil; but on looking at the edge of the water of the lake could be seen large *bunches* of vine roots, clustered as large as bushel baskets. These roots had traveled from the vineries, *below* the trenched ground of the garden and down into the water, a distance of *over one hundred yards!* The length of rafter these vines were trained to was TWENTY FEET!

SUNNY DELL VINERIES, WHITE PLAINS.



NEW SEEDLING PEARS.—Thomas H. Genin, St. Clairsville, O., has grown quite a number of seedling pears from seeds of the Seckel. We have been favored with samples of some of them the past fall, and made drawings and descriptions which, perhaps, we shall hereafter publish. Sev-

eral of them are of really high character in quality, much resembling their parent, but the size is in this age of progress against them, as they are little, if any, larger than the parent. Their period of maturity is at a later season, and we think one or two of them almost as desirable as Dana's Hovey.

THE NEW HARDY CLEMATISES.

WE have long known, and ere this spoken, of the great merit of some new hybrids and varieties of *Clematis* recently raised, but we had no sufficient idea of their capabilities till we visited the nurseries of the raisers, Messrs. Jackman, of Woking, in the early part of this month. The *Clematis* is a well-known genus, often very pretty, from exhibiting a multitude of small flowers, like *C. campaniflora*; often showy, from a profusion of handsome ones, like *C. montana*; and frequently rampant, like the common Traveler's Joy; but it is only of late that it has become magnificent, or, rather, that its magnificence has been rendered available for flower-garden ornamentation and general use. There has long been a splendid species of *Clematis* (*lanuginosa*) in cultivation, with flowers of noble proportions, often six, seven, and eight inches in diameter. This, though finer as regards its size than any of the new ones, and having in addition to the normal blue form two exquisite snowy white varieties, was generally so slow to produce flowers, and leaves too, that it remained almost an unused plant. Hardy enough to do some good in nice positions, it was almost useless for general open-air culture. But, fortunately, Mr. Jackman succeeded in crossing a very hardy free-growing species with this *lanuginosa*, and the result is a breed with the vigor of a common *Clematis* and the large and splendid flowers of the *lanuginosa*. But the color was also changed: rich purplish and plum hues were imparted to the pale lavender-blue or white of *lanuginosa*, and some of the richest hues of purple to be found in any flowers are now displayed by the varieties of this race, while one or two of the new kinds are of a fine soft blue or mauve, with stiff petals and handsome form. Not only are they distinguished by immense size and the richest color, but their pro-

fusion of bloom is something quite remarkable. Imagine a mass of foliage five feet high, supported on stakes, bearing flowers nearly as large as tea-saucers, and so profuse that their leaves are quite obscured. We have seen the plants shown in pots and in a cut state, but had no idea of their profuse way of blooming, and consequently of their great value, till we saw them at home, growing in various positions in the open air, and flourishing there as freely as British weeds could do. They were arranged in various positions—planted in beds and pegged low down, like verbenas or ordinary bedding plants, or supported on stakes, up which they grew to a height of five feet or thereabouts, and then fell down in wreaths of the richest purple. However, few can have an idea of their beauty till they see them well grown. We believe them to be the noblest hardy hybrids that have been introduced for many years, and likely to effect much for the flower-garden, pleasure-ground, or rock-work. Being perfectly hardy, they are, of course, a great help in saving us from the perpetual expense for protection so much needed now. In fact, so satisfactory are they, that the only thing we have to settle about them is their position, and how they may be used most gracefully. Firstly, they will be of the highest value as purple bedding plants—our present colors in this way being poor indeed compared to these. They may be used effectively at about the same height, or a little higher, than the verberna; and near the earth, well pegged down in this way, they are less exposed to danger from storms, and enjoy a greater degree of heat. Eventually, a beautiful harmony may be presented by beds planted with them, if the various shades of purple, plum-color, etc., are associated in lines or circles; but it is needless to attempt the enumeration of the many ways in which they will be found effective and beautiful

when associated with other good things. To pass from their use as bedding plants, we have next to consider them as the noblest obtainable ornaments for low walls, trellises, etc. To such they must, of course, be nailed or tied; and, once firmly fixed, if allowed to fall down in rich masses, so much the better. We, however, consider that the most simple and grand use of all to make of them would be to plant them on large rockwork, giving them a good depth of rich, light, and sandy earth, and allowing their shoots to fall over the face of the larger rocks without training, pruning, or any other attention whatever. Of course, almost the same words will apply to rustic banks, etc., with a warm exposure. For, drooping over the margin of those raised beds with edgings of wood or stones, they will look superb.

As to soil, it is important to note that they do best of all in a very sandy light one. They will not refuse to grow freely in any good soil, not too stiff; but we have always observed them do famously in very sandy loam, and in any case in light stuff—deep as you like, however. Mulching the ground—or, in other words, covering it with an inch or two of loose,

half-rotten manure during the summer—they like very much. It keeps the ground open and agreeably moist to the very surface. As to pruning, it is simply managed by cutting the plants back to within four or five inches of the ground in early spring—that is, if they are used for bedding, or in any way in which they may spread out low upon the ground. But when we wish to cover walls, etc., with them, the case is altered, and the stems may be allowed to go as high as they like, merely cutting them back and thinning them out a little. In banks, rockwork, etc., they might with advantage be left “to nature,” no pruning, no attention being required after the first planting in good free soil. The best of the class of Clematises of which we speak, and it must not be confounded with any others, are C. Jackmanni and rubro-vio-lacea. Both these kinds are now cheap. But since their appearance many new kinds have been raised, of which the best are Rubella, Prince of Wales, Lady Bovil, Thomas Moore, and Mrs. Bateman.—*The Field*.

[The Clematis needs only slight protection to endure the winter in our climate. See an article on the subject in “Woodward’s Record of Horticulture.”—Ed.]

REPLY TO AL FRESCO.

THE article in the January number of the *HORTICULTURIST* should have been headed *Grape Vine Swindle*. There is no fraud in the grape itself, although there has been in the sale of the vines, including both the quality of the vines and the wonderful fruits which they were promised to bear. So often have I been deceived, that I would hardly accept as a gift, with a pledge to cultivate, the most praised and highest-priced grape extant.

I like the idea suggested by Al Fresco, that amateurs should publish their experience, and I propose that they should also give their names and locality. The grape interest is of too great value to be crushed out anonymously.

During twelve years I have cultivated some sixty varieties of grapevines with great care. About fifty of these have been dug up and discarded as worthless; some would not ripen the fruit; some had the rot; others the mildew; many were too tender, and never made ripe wood. Among these last were a large number from the Patent Office, most of them, as I supposed, having a Southern origin, and not suited to a Northern climate.

Among the old varieties which never failed, year by year, never mildewed, never rotted, Hartford stands at the head of the list. I know that half a dozen years since I was ridiculed for entertaining such an idea; but it is orthodox now to believe

it. When cultivators could introduce some more worthless variety by sneering at the Hartford, they did so. You will see that I drop the word Prolific—all our cultivated grapes bear too much. I do not know one of them that is not improved in quality by taking off, in June, immediately after flowering, three fourths of the fruit. My rule is, *leave only one bunch upon a shoot*. With this treatment, and a disuse of the pernicious practice of summer pruning, which has been adopted so extensively, we can still have healthy vines and plenty of fruit.

The Hartford is an early ripener, perfects and ripens its wood for another year's fruit-bearing, and needs no protection in winter on the Hudson, where the degree of cold is often 15° below zero.

Here, then, is a native grape that is not a swindle. It has all the desirable characteristics of a good grape for this climate—not so fine as a Hamburgh or a Muscat grown under glass; but I find that my friends, who eat both, forego the latter when the Hartford is ripe, and invariably put the native in their pockets to carry home. It is, too, a good grape to sell, as it ripens early, and brings a good price.

The Clinton is a good wine grape, and as such worth cultivating. It has the good traits of hardiness and productiveness every year.

It is the rage at present to extol the Concord. With me, it rots like the Catawba. The fruit ripens about ten days later than the Hartford; the wood ripens to a healthy chestnut color; the vine is free from mildew, and endures the coldest winter. Where it does not rot, cultivate it.

The Isabella is too good to neglect. The mode of cultivation heretofore recommended was to trench and manure, keeping the vine in a sort of hot-bed, inducing great growth and full fruiting the third summer. The crop was then fine and ripened, but the vine was rendered worthless. Its next crop was mildewed, and the summer pruning made this a certainty.

In my experiments for twelve years, under high cultivation, I find that the Isabella rarely has ripened wood for next year's fruit perfectly. The exceptions have been very hot and dry summers, when the wood growth has been very slow. In rainy seasons the growth is succulent and porous, spotted with mildew, and in this state the fruit remains unripe and sour; but by taking off three fourths the fruit that sets on a healthy vine, even if growing in rich ground, both fruit and wood ripen without mildew, and *that wood* will bear a severe winter without covering. May we not then infer that overfeeding, overbearing, and pinching (any pinching or tampering with green shoots or leaves is unnatural and too much) originate mildew? Mildew attacks a weak subject, and the vine is prepared for its attack by these weakening processes. I succeed best by not manuring young grapes, by giving them another year to mature, fruiting the fourth summer, and then permitting them to bear but small crops at first. Even after they are established, six bunches of grapes on a vine are worth more than twenty-four.

I guard all the green shoots and green leaves with care, thus giving the fruit all the leaf covering the vine can afford it. The grape is a modest fruit, and likes to hide away and nestle under the leaves until it approaches maturity, and it finds its own way, in some mysterious manner, into the sunlight at the proper time. The European system of treating the grape is not suited to our climate nor to native grapes. The sooner we discard it entirely, the sooner we shall be ready to begin anew and go right.

In our hot summers the foliage of our fruit-trees and vines is of inestimable value, both to keep the plant healthy and vigorous and to sweeten and ripen the fruit. It seems to me so self-evident as to need no argument. If we could begin all over again and avoid these errors, go back to good healthy vines for our stock, I believe we could again raise Catawbas on the

Hudson. But it is of no use to take the present diseased stock to work with, as we find that the seedlings of the Catawba have the same disease as their parent. This includes with me two varieties, Diana and Iona, which I have hoped would be exceptions.

Among the newer varieties are two,

Creveling and Delaware, that prove hardy. The first has all good characteristics, and ripens so early that the wood always matures. But with both these varieties try the single-bunch theory, if you wish to have good fruit and plenty of it *every year*.

W. A. WOODWARD.

CORNWALL, N. Y., January 20th, 1868.

BEES.

BY JOHN JAY SMITH.

I HAVE been interested as well as amused by bee culture during a long life. Made to minister to man, the best examples of their utility are found in the tropics. In Cuba a cottager will have a hundred or more swarms, which are treated thus: a hollow log is set upon supporters two feet in height, and the log being open at both ends, the bees work to great advantage; a plan I would recommend for trial in this country; that is, to make two entrances to the hive, back and front. I have tried this to advantage in various experiments made years ago. As a result, I have not found bees very profitable, though they are companions whose society has always been among the minor pleasures of a garden.

But what I want to say, as a suggestion, is the following. I lately purchased an old farm on the Schuylkill River, of fifty acres, which had been in the occupancy of a single tenant for thirty years. The house is of wood, much the worse for age, and had been a really handsome country seat when the Schuylkill banks were not considered (as they really are) unhealthy.

Originally, the mansion was well built; the eaves, and indeed the whole structure, when I came into possession, were without paint, and had been so for a very long time. In the northwest corner, and in that of the southwest, swarms of bees had found small apertures, into which they entered—one, according to the tenant, thirty years ago, and the other about twenty years.

Here they continued to live and perform their working duties till last year, 1867, when the old tenant of the farm, who had used up every particle of available soil, and all the trees, was displaced for a new and more intelligent tenant, who had heard his predecessor lament his inability to get at the supposed horde of honey which must have accumulated greatly. He was afraid of the stings!

Not so the new occupant. A few days since he went into the chambers, ripped up a flooring board, the weather quite cool, and was rewarded by such a quantity of fine old and new honey as surprised him greatly. Bucketful after bucketful awaited his labors, including bee bread, etc., *ad libitum*.

Now, what do we learn by this raid upon an old swarm? Simply this. There was not the slightest *perch* in either of the eaves for the bees to alight on; they arrived as regularly as bees do, alighted on the eave boards at a *very small* hole, and went their way rejoicing in the absence of the moth; and they had done this for twenty and thirty years! What does this teach? Undoubtedly, that a *perch*, which will also accommodate the great enemy of the bee colony, the moth, is unnecessary. The hint is given to bee fanciers, and should it be found, on further experiment, successful, a new era in bee culture may result. Two openings may also be tried with success.

GERMANTOWN, PHILADELPHIA.

THE COMMERCIAL ASPECT OF HORTICULTURE.

THE pleasing idea entertained by many of the uninitiated that this beautiful and agreeable pursuit is without its asperities may soon be dispelled by a casual glance at our periodical or serial literature. The admirer and lover of plants, fruits, and flowers, as objects of beauty and promoters of health, and the art and practice of culture of the earth as a noble exercise of the human faculties, can not at this busy period in the history of gardening advance very far in the study or pursuit of specialties without learning that there are little difficulties in the way, slight obstacles to be surmounted, and trifling irritants which they must learn to overcome or avoid.

If it were not so, horticulture would possess little charm for the enthusiastic amateur, and no man with severe commercial requirements should be content to follow plant-growing as a profession. Horticulture, then, has two aspects: one is so well fixed on the imagination of the civilized portion of society that it is the subject of universal admiration; the other partakes of the disappointments and reverses of other mercantile occupations, losing almost nothing of the displeasing and annoying elements so closely interwoven with commercial speculations.

For some years past we had presumed that the quiet and pleasing aspect of horticulture was quite lost in the ardor of trade speculations, for at every hand, wherever the amateur might turn, he was beset by the vendors of some "novelty" in the gardening line. These unpleasant importunities might in part be avoided by taking refuge in the "deep recess of some inaccessible village or sequestered spot" at least a few miles from the great agitator, the railroad. But, alas! our country has now few such retreats which are within the means or reach of the hopeful amateur, and not equally accessible to his horticultural

friends, who with the most gratifying and commendable alacrity hasten to convey to him at his villa retreat the tidings of the latest blackberry, strawberry, grape, or potato acquisition.

It is very pleasant "to talk horticulture" with an enthusiastic amateur, even if of the male sex, and we must confess that we have met with commercial horticulturists whose conversation was at once interesting and charming. We seldom meet with these now—they belong to the past history of our business; or, if a few still linger out the latter days of their flowery life, they, too, have sought retirement, a little soured with the present commercial tendencies of the profession.

One other resort remained to the quiet-loving amateur of horticulture; while avoiding these annoying extremists, whose catalogues could not be scanned at one reasonable interview, so replete were they with striking novelties, we hoped to find comfort in the perusal of the "weeklies" and "monthlies," now so numerous, devoted with a *single eye* to the promotion of the art in all its beauty and purity; and thus without losing our interest in, or acquaintance with, our favorite study, might avoid the less pleasing details in which we could feel no interest.

But it would appear that the commercial enthusiasm has laid siege even to the horticultural periodicals, for we can scarcely open one of them without finding the most startling descriptions of new grapes, new strawberries, new blackberries, new raspberries, new potatoes. and, in truth, everything in the catalogue with the prefix "NEW" and "SPLENDID." But we are informed by those who have more skill and experience than ourselves, that only in the advertising pages are these to be found, and that they are as essential to the value of the periodical as the literary matter itself.

Well, we are again quieted, and we again peruse the last *HORTICULTURIST* with our former interest. Yet, behold, on page eight of the January number we meet with the heading "The Grape Swindle," and as we had secretly conjectured that there was something bordering on a "swindle" in the manner and tone of some of these great grapists, vinists, vigneron, viticola, and many other such pseudonyms, we set ourselves confidently to read the complaint of "Al Fresco." We regret to say that we are compelled to assert that the case is not fairly, at least, but partially stated. Are there no swindles but grape swindles? What of new strawberries with fictitious value appended to them, not found alone in the advertising pages, but prominently indorsed by regular correspondents, some of them under assumed names of respected horticulturists, and others with descriptions which belie themselves.

But we are arrested in our condemnation of the periodicals by our prudent "friend," who urges that all our horticultural periodicals are not equally entitled to censure. Ah! that may be; we shall be more careful in our examination of their articles in future.

But our friend urges further—that a closer acquaintance with the entire subject of these "novelties," and the manner in which they are produced and brought before the public, would be requisite before taking the violent course of a wholesale condemnation of the novelty department of the nursery business. Are not the reputations of some of these dealers who offer high-priced and untested novelties for sale sufficient guarantee for five dollars, or ten, the price asked for a new grape or a dozen of the newest strawberries? This is at least a motion in arrest of judgment, and must be duly considered. S.

THE NEW JERSEY STATE AGRICULTURAL SOCIETY.

THE annual meeting of this Society was held at the Capitol, in the city of Trenton, on Wednesday, the 15th of January last, at eleven o'clock A.M. The meeting was fairly attended, a very large proportion of the stock represented, and was one of considerable interest. At the morning session the reports of the Executive Committee and the Treasurer were presented, and certain changes made in the by-laws of the Society; the afternoon session was mainly occupied in listening to a paper read by Mr. P. T. Quinn, on the subject of Fruit Culture in the State of New Jersey. This paper took a broad view of the whole subject, and was replete with valuable instruction, the result of a large experience by the author. The discussions and desultory talk which ensued on this and kindred subjects were full of interest, and such as mark these agricultural meetings and make them attractive.

The election for officers for the ensuing

year was held at twelve o'clock noon, and was by ballot, resulting in the unanimous election of the following

BOARD OF DIRECTORS—Gen. N. N. Halsted, N. S. Rue, Col. R. S. Swords, Wm. M. Force, Benjamin Haines, His Excellency Marcus L. Ward, George R. Dunn, Peter H. Ballantine, Wm. H. McClave, P. T. Quinn, John Boylan, S. G. Sturges, Hon. Amos Clark, Jr., E. G. Brown, D. D. Buchanan, J. M. Pruden, J. S. Buckelew, H. D. Van Nostrand, W. G. Schenck, John Rutherford, T. W. Satterthwaite, F. W. Woodward, J. V. D. Hoagland, J. J. Erick, Benj. Acton, and Isaac R. Cornell at large.

At a subsequent meeting of the Board for Organization, held the same day, Gen. N. N. Halsted, of Hudson Co., was elected President; N. S. Rue, Esq., of Monmouth, Vice-President; Col. R. S. Swords, of Essex, Corresponding Secretary; William M. Force, Esq., of Essex, Recording Secretary; Benjamin Haines, Esq., of Union, Treasurer.

And in conjunction with these gentlemen, George R. Dunn, Esq., of Essex; Hon. Amos Clark, Jr., of Union; Wm. H. McClave, Esq., of Essex, were elected to constitute the Executive Committee.

As among the matters of most general interest, we quote from the report of the Executive Committee, which we regret not having space enough to insert in full. This report, after a comprehensive yet succinct statement of the work of the Society during the past year, proceeds as follows: "And now it may be asked, What have we to do? Are we to rest on what we have already achieved? Are we to await in quiet expectation the coming round of another annual exhibition and trust to the results that may then be developed, and catch our inspiration from the hour? If such were our course, we should prove false to our responsible duties and to our high destiny. We must be up and doing. This is an age of progress—wonderful progress. We must either keep up with its march, or be left behind in useless obscurity. The advance in agricultural science, as compared with that of even the last generation, is truly wonderful. In nothing is this fact more strongly evidenced than in the agricultural implements of the day. Twenty years ago, the inventive genius of the country was displayed in forty-three agricultural implements patented in one year, while within ten months of the past year we have the amazing result of one thousand seven hundred and seventy-seven patents issued for such implements.

"Then, again, we see a sudden development of specific agricultural interests, almost incredible in amount, as, for instance, the hop crop. One State alone (Wisconsin) produced 7,000,000 lbs. during the last year, nearly doubling the crop of the previous year. The entire crop of the United States in 1860 was less than 11,000,000 lbs. The increase alone of Wisconsin last year was nearly equal to the total crop of the United States in 1850. So, again, among

the fruits, as, for instance, the grape. The progress in the culture of the vine during the past year seems to have outstripped all previous ones. We had exhibited in the horticultural and pomological department of our own fair fifty varieties of native grapes by a single exhibitor. The estimates of the value of this one interest, in number of acres planted, and in the returns of the vintage, are almost too wild for belief. The Secretary of the American Pomological Society, whose means of knowing are better than those of most of us, places the value of our grape crop at a higher figure than that of France—the grape country *par excellence*.

"It is so, too, with various other interests. One county of our own State (Salem) furnishes the greater part of all the herdsgrass seed that is found in the market, and this, be it remembered, is chiefly the yield from lands which have been recovered by drains and dykes. They have sold from that county in one year 90,000 bushels of this seed. What an item of encouragement to other parts of the State to proceed in the work of reclaiming their waste lands!"

The report then proceeds to speak of a visit made by a delegation from the Society on invitation to Salem and Cape May, which seems to have been not only full of interest in a scientific view, but immensely enjoyable as a pleasure trip. After which, the report concludes as follows, which is indicative of the policy of the Society as a State association.

"Before we close a report in which we can touch but casually on the various points to be brought to your notice, we have a word to say on what has been the policy of your Committee in the government of the Society.

"First and foremost, your Committee have endeavored to keep constantly in view one cardinal principle, and ceaselessly to impress the same on the minds of our stockholders and all others with whom we have had dealings as a society, that is, that the New Jersey State Agricultural Society is

no county association, nor society of local interests, but is what its name imports, and what, if we are faithful to our trusts, we shall strenuously insist on keeping it, namely, a State institution, whose object and sphere is, in the language of our Constitution, '*to improve the condition of agriculture, horticulture, the domestic and household arts.*' We are to know no one interest to the exclusion of others, but to see that each of these has its due share of our patronage and fostering care. The strongest pressure our association will be subject to will be in behalf of the horse interest. This is perfectly natural. It is the most dangerous, because the most insinuating and seductive. It is a sad history in every agricultural society where they have allowed this interest to become paramount, that the society has gone to an early decadence, dwindling down into a mere race-course, languishing for a year or two, and then remembered only among the things that were.

"The horse is undoubtedly a noble animal, and as such is worthy our highest regard and utmost care. We can do everything in the way of encouraging improve-

ment in breeding and in bringing into our State the finest blood of the country. We can go further than that, we can look to him as one of the attractive features in our annual exhibitions, and make him return to us in our revenues an equivalent for the care and pains bestowed upon him; but we must jealously guard against ever permitting this attractive and dangerous element so to encompass us as finally to be helplessly—and despite our own will—lost within its embrace. To some we may give offense by these words, or seem too slack in what the strong interests of the Society demand of us; but your Committee would say that nothing has exercised their minds more than this one subject, and we commend our views to the right understanding of impartial minds who are willing to give us credit, at least, for honest convictions and true intent."

The report seemed to give very general satisfaction, not only in assuring the minds of the purely agricultural members that the Society never could degenerate into a jockey club, but also in quieting the fears of some of the horse gentry that their favorite was to be tabooed.

PEACH BORER AND YELLOWS.

It may be interesting, as well as useful, to some of the HORTICULTURIST readers to know of a safe and effectual method by which the fatal attacks of the peach borer may be prevented. Having tried all the plans proposed for the last five years—merely as an experiment upon neglected trees—I have found them all deficient in one thing, *i. e.*, in preventing a renewal of attack. Nine years' experience fully proves to me that the waste water of salt works, called "mother liquor," or "bitter water," is a sure preventive. I will not aver that it will kill the worm when once in the tree, as my experience is not conclusive on that point, but I do assert that it has killed them by thousands when partly in the tree and not entirely shielded by the bark.

We apply it any time during the summer, but when possible, in June and last of August, putting about one pint of the liquid around the base of each tree. At the same time we wash the body and main limbs of the tree with the same liquid, which removes scales of dead bark and kills the eggs of insects.

My observations in the treatment of trees to this liquor leads me to declare it to be the most powerful agent in preventing the dreaded disease known as "yellows" that has yet been discovered. Trees in a rapidly declining state from the effects of this disease, being treated to this liquor, took on a new life as it were, casting their yellow leaves and throwing out an immense healthy foliage.

JOHN M. JENKINS.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

MR. EDITOR: I have been engaged in grape-growing for about eight years, and during this time I have planted about fifteen acres. Out of the many kinds I have planted, I have had it constantly in mind to select a few out of them that had superior qualities over the rest, for table use and wine combined. Up to this time I have not made a final selection. When I look at *quality of fruit* only, I would take Delaware, Iona, and Herbemont as the three best for table use and wine. The first three years of my experience in grape-growing was on the Gasconade River, two miles above its junction with the Missouri. Here, the Delaware lost its leaves early in the summer; and the Herbemont winter-killed, even when covered. In the spring of 1864 I bought a tract of bluff land on the north side of the Missouri River four miles above the mouth of the Gasconade River. Here I planted mostly Norton's Virginia, Concord, and Delaware, and although it was only about four miles distant from my old vineyard on the Gasconade, the vines made such a vigorous growth that one could hardly distinguish the variety, especially the Delaware, which grew more like Concord, holding its leaves until frost. I planted a few Iona, Israella, and Herbemont for trial. I have since sold this tract of land to the Bluffton Wine Company, and planted another vineyard four miles farther up the river, on soil very much like it, on the banks of the Missouri, facing southeast, south, and southwest. I have planted mostly Norton's Virginia, Delaware, Iona, and Herbemont. All the varieties made a fine growth last season, and all held their leaves in a healthy state

until frost, with the exception of the Delaware, which had small spots of mildew on a few of the leaves. The Herbemont does not winter-kill here, and I have made up my mind to plant largely of both Delaware and Herbemont in preference to Virginia and Concord. My experience with the Iona is only of three years' standing. I have planted several hundreds of the vines within this time, and find it healthy in leaf, and in vigor about like Catawba. I first tasted the grape three years ago, and I think I have seen no American grape equal to it in quality. Last fall I had a few bunches from the vines I planted at Bluffton, and I was confirmed in my first opinion of its superior quality. I should be glad to know to what extent this variety had been planted in this State, and with what success. My experience on this side of the Missouri, so far, confirms me in the opinion that the Delaware, Herbemont, and Iona will prove to be the three best varieties, both for table and wine, on thousands of acres along the north bank of the Missouri River. They will require more careful culture than Concord and Virginia, but they are enough better in *quality* to pay for the extra culture. Delaware and Iona have a poor name at Hermann and along the south bank of the Missouri; but I think our vine-growers are beginning to see that there is a great difference between the soil on the two sides of the river for certain varieties; and, heretofore, the reports from Hermann have had too much influence in leading others to discard such varieties as did not succeed well there. Our best-flavored varieties should be well tried in all locations before deciding to leave them

out and plant such as Concord, Hartford, Virginia, etc. I do not believe grapes of this quality will satisfy the taste of many, after they get more familiar with the Delaware, Iona, and Herbemont, and others of that class. For the past few years our grape-growers here have been crazy with the idea of *immense profits* from an acre, and the *quality* was of little account if it paid well. This can only be corrected by experience, which they are beginning to get.

J. S. H.

IMPERATRICE EUGENIE CHERRY.—This is a new cherry, as yet but little grown in this country. It, however, promises to become quite valuable, and especially West and Southwest. It is of the Duke family, size of May Duke, rich dark red, with a reddish flesh, tender, juicy, subacid, and ripening about the same time as the May Duke.

PRUNING TREES IN SPRING.—When pruning trees in the spring, remember that for every bud or inch of wood you cut away, two more will be formed; and if you do not so cut as to throw the elongation from the last bud on the shoot left in an outward direction, your tree will soon be a mass of shoots and branches, and cause you to oppose any practice of pruning. On the other hand, if you carefully study the probable continuation of each bud left at the end of the shoot pruned, you can form your tree into a round, open, compact, or spreading head, according to your fancy. We could write a whole book on this item; but our belief is that a few practical words of guidance are all that is requisite to induce thought in the good common sense of our readers.

MR. EDITOR: H. W. Sargent, Esq., in the *Gardener's Monthly*, deploring that America is the worst fruit-growing country in the world except the north of Europe, says: "I may say peaches and gooseberries are probably entirely unknown to children of ten years of age, though fifteen years since I grew them successfully."

I live within sight of Mr. Sargent's house, and although I can say but little of the peaches, I have had every year an abundance of gooseberries. The Downing, a high-flavored delicious fruit, the Mountain and the Houghton, are all American varieties, never mildew, are prolific bearers, and worthy of cultivation. I planted these many years ago to take the place of the Lancashire varieties, and they are very satisfactory; the children under ten knew where to find them in great plenty last summer.

W. A. WOODWARD.

WINTER MEETING OF THE IOWA STATE HORTICULTURAL SOCIETY.—From the record sent us, the meeting of this young State Society, held early in January, was numerously attended and the show of fruits quite large, numbering over two hundred plates of apples alone, besides grapes, pears, etc. We rejoice at this outcome, as it were, of the knowledge and love of fruit-growing which that young State possesses. But we must beg to dissent from one line which the reporter or writer of the proceedings has incorporated, viz., "Eastern experience is of little avail to us."

If the writer thereof lives a few years, and makes fruit-growing his study, he will find that he was very far from the truth when he so wrote. It is the experience of those who have gone before us which must guide us in making progress. Without such reference and regard thereto we should only be repeating the errors that have been committed. Iowa is not so much a distinct climate or State, either in soil or temperature, that she can afford to throw aside the experience gained by the long and earnest labor of Illinois, Indiana, Ohio, New York, and New England. And while we accord her cultivators equal intelligence, we advise them to consult the records of horticulturists in other States.

We have no doubt of the success of fruit-growing in Iowa, but at the same time desire to say to those engaging in it,

do not count on success without very considerable labor and disappointment. We are glad to see the Society urge the extensive planting of trees, both fruit and ornamental. We have long considered this one of the leading items which should be impressed upon the minds of all fruit-growers, and especially of those in our new Western States.

The hardihood of varieties, we also notice, was slightly discussed, and the Early Harvest, heretofore considered tender, put down as "equally hardy with the Red June." We look for a radical change ere many years in all the foregone statements of such and such a variety becoming diseased, tender, bark bursting, etc., etc.

WILKINS, NEAR PITTSBURG, PA.

WILL you oblige a young florist by giving a list, in your valuable magazine, of the best annual flowers adapted for cutting in summer for bouquets, and selling in market?

P. J. T.

[There are really few or no annuals that are just what we should consider desirable to meet the wants of our inquirer. Hardy shrubs or perennials would better answer his purpose; but if he must have annuals, we name the following as among the most desirable: Alyssum varieties; Phlox Drummondii varieties; Zinnia Elegans varieties; Calliopsis varieties; Candytuft, white and purple; and for the latter part of the season, Asters in their numerous varieties, all beautiful.]

AN ITEM FOR TREE-GROWERS.—Chas. Downing says that he once witnessed a remarkable change produced on the body of a pear-tree by means of wrapping it in straw. The tree was a Brown Beurre, grafted about seven feet high from the ground, upon a stock which for years had not grown as rapidly as the graft, and presented a very decided bulge or swelling at the junction of the graft. This smaller portion was encased in straw about two inches thick, and at the end of two seasons it was found on removing the straw that

the contracted, or heretofore smaller, stem had swollen to the full size of the graft above, presenting but a slight indication of the point of union between graft and stock. This is an item of interest, and many tree-growers who have trees with contracted stems, evidence of some natural want of affinity with the graft, may find in it a hint for practical use. We have ourselves practiced wrapping the stem of Morello cherries, when worked at a height of two or three feet with the free growing or sweet varieties, with moss, and thus kept them swelling regularly with the growth of the graft for years.

AGRICULTURAL EDITOR OF NEW YORK WEEKLY SUN.—We note with pleasure that the New York weekly *Sun* has secured the services of our contributor and correspondent, A. S. Fuller, Esq., as its agricultural editor. While we are able to state that the *HORTICULTURIST* will retain Mr. Fuller among its contributors, we at the same time congratulate the proprietors of the New York *Sun* on having secured the services of a reliable and practical man thoroughly acquainted with his subject.

TERRE HAUTE (ILLINOIS) HORTICULTURAL SOCIETY.—At the annual meeting the following gentlemen were elected officers of the Society for the year 1868: President, H. D. Scott; Vice-President, Silas Price; Secretary, Jos. Gilbert; Treasurer, F. E. F. Barnes; Directors, H. D. Scott, Silas Price, Jos. Gilbert, F. E. F. Barnes, John G. Heinl, Wm. Patrick, G. W. Edwards, A. B. Pegg.

APPLES IN NORTH CAROLINA.—J. Lindley & Son, of New Garden, North Carolina, write they have two apples of great value, viz., "Golden Wilding," a roundish oblate, yellow, very good; tree, strong, upright, and thrifty, and a great bearer.

"Royal Limbertwig, large, roundish oblate, dull red, covering mostly a greenish yellow ground; great keeper."

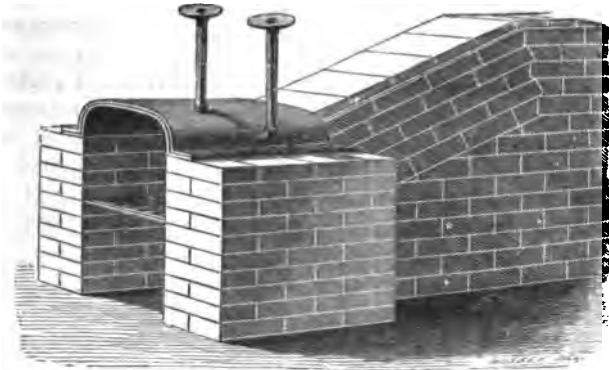


FIG. 37.—*Green-house Boiler.*

GREEN-HOUSE BOILER.—We have had several inquiries from our subscribers about a chief and efficient boiler for propagating purposes, to be used in connection with the common brick flue. Until lately we have been unable to find such a contrivance that was satisfactory to us. A short time since, while at the establishment of Messrs. Hitchings & Co., 81 Centre Street, we saw a small saddle boiler which seems to us to answer the purpose exactly. We have had an illustration made of it for the benefit of our readers who may desire such a contrivance to heat a propagating tank or small house connected with a general green-house through which the main flue can not be conveniently built. It will be seen from our engraving that the boiler forms the top of the furnace immediately over the fire, and that all its interior surface is exposed to the direct action of the burning fuel. The tank for bottom heat may be placed directly over the boiler, or the boiler may be connected by small pipes with a tank located in a back shed or other desirable position.

FARMER'S MANUAL.—I wish to recommend "Todd's Farmer's Manual." I think it ought to be in every farmer's library, and am sure no one will ever regret purchasing it, as it is an indispensable help in all branches of farming and mechanics.—J. H. R. in *Country Gentleman*.

NEW CANADIAN GRAPES.—From a little treatise on "Grapes, their Cultivation," etc., by D. W. Beadle, St. Catharines, C. W., we extract as follows: "*Laura Beverly*.—This is a new black grape, much resembling the Hartford Prolific in bunch, berry, and time of ripening, but of better quality. It was raised by the Rev. Alexander Dixon, of Port Dalhousie, in this county, and never has received any protection or special treatment. It has the merit of being perfectly hardy, a great bearer, ripening early, of good quality, free from pulp, and hanging perfectly on the bunch.

"*Silver Cluster*.—Originated with William Reed, County of Lincoln, is far superior to Allen's Hybrid or Rebecca, or any other white grape yet offered to the public."

BOOK NOTICE.

RURAL CHURCH ARCHITECTURE, published by Geo. E. Woodward, New York. Large folio volume. Price \$12.

This work comprises a series of eighteen designs, twenty-eight elevations, and thirty-two plans of churches by the following eminent architects: Upjohn, Renwick, Wheeler, Wells, Austin, Stone, Cleveland, Backus, Reeve, etc. The designs are printed in colors, and all drawings are made to a working scale. Carpenters, builders, architects, and building committees will find this book a valuable aid.

Poultry Department.

CONDUCTED BY A. M. HALSTED.

CREVECŒUR FOWLS.

Our experience with Crevecœur fowls during the past year having been solicited from many parties, we present it in this form.

On February 19, 1867, we received from Europe *two cocks and six hens*, and on March 25 *two more hens*. One of these last

was sick when received, and died on April 2. The first egg was taken in March 4.

On the 20th of the same month we commenced an accurate account of the number of eggs received daily. At that time we were taking in *four* eggs per day. On September 20—*six months*—we footed up

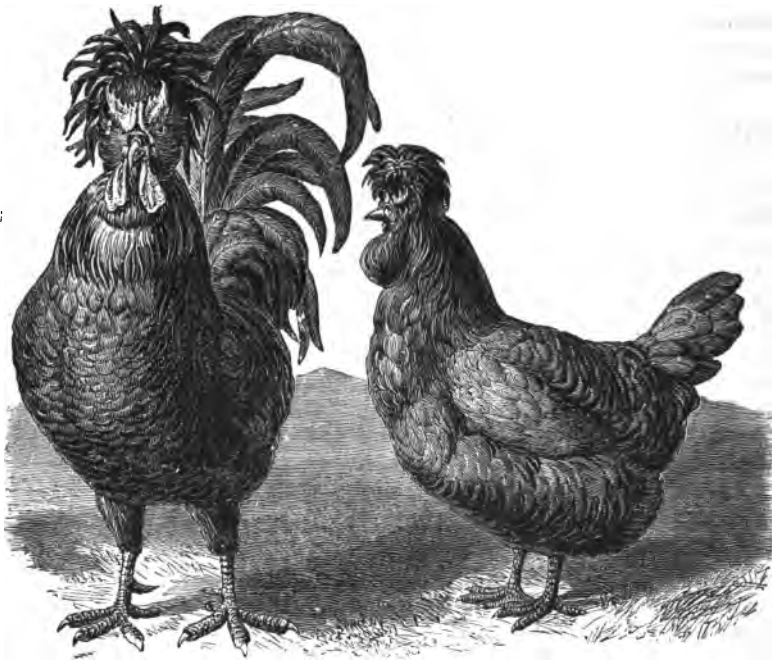


FIG. 38.—*Crevecœur Fowls.*

DRAWN FROM LIFE, FROM FOWLS IMPORTED BY A. M. HALSTED, RYE, N. Y.

the account, and had received 1,084 eggs, or an average of *nearly* six eggs per day for six months. During the next month—to October 20—we received 155 eggs, and from that time to November 20, 71 eggs, making a total of 1,310, of which an ac-

count was kept. During the early part of March we probably took in 25 eggs, and *after* Nov. 20 about 40 more, which would make the entire number laid during the year, or, rather, in *nine months*, 1,375—an average of *almost* 200 eggs per hen.

During the whole season, not one of the hens showed the least disposition to sit; and but *one* was sick, which was from the breakage of an egg in the ovary, and was cured in about ten days.

During the past severe weather of this winter the fowls have had no more protection than our Brahmas, Cochins, Games, and other fowls, and seem to have borne the cold weather better than all, except the Cochins, Games, and Houdans, all of which seem about equally hardy.

We had been told that the Crevecoeurs were especially tender in this country at the age of six months, and would be almost certain to die off at about that age; but were pleased to find that our fears were groundless. We have lost but one fowl since they were four months old, and attribute that as much to neglect as sickness.

As to their table qualities, we can speak only from hearsay. Those who *have* tried them here, and friends and relatives who have tried them in Europe, pronounce them superior to anything of the poultry kind ever before eaten. In regard to the eggs, we *can* speak. There is a peculiar fineness of grain and delicacy of flavor found in no other egg. We have repeatedly had them *poached*, with other varieties on the same dish, and could invariably tell the Crevecoeur from any and all other varieties by the *taste* alone.

The eggs are very large, and shell rather inclined to be thin, as is generally the case with pure-bred fowls. The fowls themselves are large and handsome, and are an ornament to any poultry yard, as well as being of great utility. We append a brief description, plumage, etc.

Plumage, brilliant black, sometimes a little golden or silver tinged; a large and beautiful crest; large two-horned comb, sometimes toothed; close and thick beard, and handsome pendant wattles of a brilliant red color. The neck is of medium length, well arched, and covered with a very thick glossy hackle. The legs are

black or slate color, short, and free from feathers. The thighs are large and fleshy, supporting a long and square body, with a broad, full breast, and rather large, closely-set wings; the tail is full and well sickled, altogether giving them a very upright, handsome carriage. They are very tame, ramble but little, and seem better contented at home than wandering afar off. They are great layers, eggs are very large, and they continue laying a long time. They mature very early, and are fit for the table at three and four months old; frequently weighing 6½ lbs. when well fatted. Non-sitters.

COMMON vs. FANCY FOWLS.

No. 2.

PROBABLY every farmer who has had the chance of observing, as well as others whose attention has been called to the matter, will acknowledge the superiority of Southdown mutton over a common mongrel carcass, and also the preference in favor of a good shorthorn bullock for the shambles over a Western steer with the blood of a hundred or less mongrel stocks in his veins. Certainly your butcher, if he understands his business, will tell you at once which is accounted the most valuable; and if said butcher's patrons order *Southdown* mutton, and examine their pass-books, they can see for themselves, and feel also, financially, the difference in value. And yet these same persons—farmers, citizens, or others—are very slow to acknowledge that there is any difference between one fowl and another.

A chicken is a chicken, whether it weighs 2½ lbs. at maturity or 10 lbs.; whether it is tender or tough. And an egg is an egg; large or small, delicate in flavor, or tough and rank.

"You can't tell me anything about fowls; why, I raised them before *you* were thought of." *That's so*; and before steam was thought of as a motive power—before the lightning was tamed—before steel fingers worked our button-holes and made our

pantaloons, etc. And you raise the same old kind yet, don't you?—because your great-grandfather's grandmother did. And you get from 25 to 40 eggs a year from each hen, don't you?—because your great-grandfather's grandmother did. And you let them roost under the hovel and sheds, and dirty up your carts, wagons, plows, etc., allowing *dollars'* worth of the most valuable manure you have on your farm to go to waste—because your great-grandfather did.

Well! how much money do you *make* by doing just what your above-mentioned venerable ancestor used to do?

That is a *practical* view of the question. How much money do you *lose* by keeping and feeding fowls that lay 50 eggs per year, instead of 150?—by breeding fowls that weigh 3 lbs. to 5 lbs. each, instead of those that weigh 6 lbs. to 8 lbs.? Just think this over until next month, and then we will "talk to you some more."

KEEPING FOWLS IN ORCHARDS.—The public has yet to learn the full advantages of keeping poultry. Few seem to appreciate the service they may do among the trees in an orchard. Let any one try them in an orchard of a quarter or half an acre, where they may be kept by picket fence, four or five feet high, putting in say one hundred and twenty-five fowls, and observe the result. He will avoid the annoyance in the garden of which so many complain, while they will work among the trees, doing just what is needed, keeping the ground well cultivated, and destroying everything that can injure the fruit-trees in the shape of bugs, worms, or other insects, and lay a large number of eggs, which are a cash article, to say nothing of the chickens, which pay well for raising at the present time.

I have tried it, and I know it is so. I have about one hundred fowls, which have worked admirably among my trees, keeping the ground in good condition, keeping off the insects, and promoting the growth of the orchard. I am satisfied that we

have yet to learn the full benefits which may be derived from the proper management of fowls, and it is quite possible that the method I have suggested may offer the best way of getting our apple orchards into bearing condition again.—*Cor. Northern Farmer.*

POULTRY RAISING AND PROFITS.—From Moore's *Rural New Yorker*.—John Crane, Schuyler Co., N. Y., writes: "I send you the results of my experience in rearing the Brahma variety of fowls, with my expenditures, receipts, and profits, for insertion in your paper. The length of time embraced in the following statistics was one year, commencing Nov. 18, 1866, and ending Nov. 18, 1867. The number of fowls at the first-mentioned date was 18 hens and 2 roosters, being the same number as left on hand at the last-mentioned date. The account stands thus:

Cost of keeping the old fowls.....	\$15 45
Cost of rearing 90 chickens.....	19 70
Total expense.....	\$35 15
Number of eggs sold, at 35 cents per dozen—155 5-12 dozen.....	\$53 39
Sold fowls to the amount of.....	55 57
Total receipts.....	\$108 96
Expenses as above.....	35 15
Nett profit.....	\$73 81

CORRESPONDENCE.

E. S. B., of Broome County, N. Y., asks, "What is the peculiar excellence of the Bronze Turkey? how heavy do they get?"

First. They are more hardy, easier to raise; they do not roam so much as the common turkey; they are double, treble, and sometimes quadruple the size of the common, and are also more tender in flesh, besides being a much finer flavored bird for the table.

We have *seen* turkeys that weighed upward of 40 lbs., and know of a number that have weighed over 50 lbs. Andrew Johnson had a present of an old gobbler for his New Year's dinner that dressed *over* 50 lbs. We own a gobbler, seven months old, weighing 25 lbs., and a hen turkey weighing 22½ lbs.

THE HORTICULTURIST.

VOL. XXIV.....APRIL, 1868.....NO. CCLXII

RURAL CEMETERIES.

NEARLY twice twenty years have passed since the tract of country situated within sound of the Cambridge bells, and known to every college graduate of the time for its natural and, we may say, unsurpassed beauties was set apart for a rural cemetery. The selection of this spot for the purpose was indeed a great loss, not only to the lover of flowers, who could no longer roam with his accustomed freedom in search of the objects of his affection—for here upon its sunny slopes he was sure to find that harbinger of spring, the modest hepatica, days and even weeks before it dared to open its delicate petals elsewhere, and in its more hidden recesses, the blue-fringed gentian, white with the frosts of later autumn, long after it had disappeared in the regions adjoining—but also to the sportsman, who could no longer be permitted to tread its secluded covers. Great as was the loss to these, to the public it was a gain, for its very loveliness contributed to inspire the people generally with a taste for embellishing the resting-places of the dead. From the time of the consecration of Mount Auburn until the present, no one idea has been received with more favor in our country than the laying out of public cemeteries in the neighborhood of

our cities and towns. In fact, to such an extent has this been carried, that there is scarcely a country village that has not made the attempt to adorn its neglected grave-yard, or, not content with this, to lay out a new lot more in accordance with the prevailing tastes of the day.

While it is not always feasible to select a suitable spot for a rural cemetery, that is, one combining natural beauties together with the proper soil, and that, too, within a convenient distance, the cemeteries in the neighborhood of Boston have been most admirably located. What could we have better adapted to the purpose than Mount Auburn, Forest Hills, and Mount Hope, and a host of other cemeteries connected with and belonging to the neighboring towns! With their noble trees of every variety, with the rare shrubs and native flowers which have been so lavishly bestowed upon them by nature, with the disposition of their surface broken up into eminence, gentle slope, deep dell—and these adorned with lake and rivulet—it would seem that they were already fitted, without the aid of man, as resting-places for the dead. And they are so fitted—most admirably fitted—in themselves for such a purpose; but man's ambition, love of osten-

tation, and desire to outdo his neighbor cease not at the grave. And herein lies the object of our present paper—to set forth the folly, bad taste, and want of proper judgment, the effects of which so frequently disfigure our most beautiful cemeteries. First of all, we would speak of that almost universal propensity that exists, to shut in the dead by fences and barriers of every description, as if the occupants of the grave would encroach upon each other's rights. And what explanations can be offered for this wide-spread incongruity? Certainly these barriers can be no protection against a trespass upon the property where there is a willful determination for destruction or mutilation. Neither can they afford any sense of seclusion to the mourner who at the grave would seek communion with the dead. As to their use as defining the limits or bounds of the proprietor, the same end may be attained by means against which no objection can be made. No good reasons can be brought forward why such obstacles to all natural beauty should be tolerated. The most that can be said is, that their erection is simply a fashion into which people have been very unwisely led, and of which they have as yet failed to see the impropriety.

If so much objection is offered to the act of placing any fence or barrier around the various lots in our cemeteries, words would fail us if we attempted to portray the senseless vanity so often exhibited in their construction. In this connection, then, we can not do better than to quote the remarks of Downing on this very subject, every word of which meets our fullest approbation: "Few things are perfect; and beautiful and interesting as our rural cemeteries now are—more beautiful and interesting than anything of the same kind abroad—we can not pass by one feature in all, marked by the most violent bad taste—we mean the hideous *ironmongery* which they all more or less display. Why, if the separate lots *must* be inclosed with iron railings, the railings

should not be of simple and unobtrusive patterns, we are wholly unable to conceive. As we now see them, by far the greater part are so ugly as to be positive blots on the beauty of the scene. Fantastic conceits and gimcracks in iron might be pardonable as adornments of the balustrade of a circus or a temple of Comus; but how reasonable beings can tolerate them as inclosures to the quiet grave of a family, and in such scenes of sylvan beauty, is mountain high above our comprehension."

The same remarks are applicable to the incongruous, uncomfortable-looking iron sofas and chairs; as well as to the vases, flower-baskets, images, etc., which so often encumber the inclosures. Then, again, how little in keeping with the green turf and the natural slope are those large masses of masonry in the shape of steps, and those blocks of hammered granite, which without meaning attract the eye to the exclusion of other objects more in harmony with the spot! And this applies as well to the country graveyard, where injudicious attempts have been made to beautify by inclosing here and there a family lot, and raising it above the surrounding level by this same means. In fact, it would seem as if many of our cemeteries—nay, all of them—had been selected by the iron merchant as well as by the stone-cutter as the very best possible market wherein to display specimens of their handicraft.

The universal desire to mark the sepulture of the dead by the erection of monuments has prevailed among all nations from the most remote antiquity, these monuments varying in design, from the choicest sculpture which distinguished the tombs of the Greeks and Romans to the simple cairn or pile of stones which designated the resting-place of the barbarian. In the modern cemetery of our own land, where every one has the means more or less ample of gratifying his own tastes, we should expect to find—as we do—monuments of every design that the ingenuity of man could devise, some of them appro-

priate, but many, very many, wanting in the very first principles of propriety. Of this, while we may lament, we can not complain, for in such a matter it would be impossible to carry out any restrictions beyond those of a general character.

Having thus freely found fault with the rural cemetery as it now is, it becomes us to state what we would have, and where in our judgment we would suggest improvements, although this may be inferred from the remarks already made.

A suitable spot having been selected, ~~one~~, if possible, already adorned by fine trees and combining variety of surface, and of which water shall be an essential feature, let it be surrounded by an appropriate fence or wall of sufficient height, but not one which will give the impression that it surrounds a prison-yard. At present, wood would seem to be the most appropriate material for the purpose, as it is the least expensive, and harmonizes with the rural character of the place. Stone, of course, should be used wherever practicable. The gateway should be invariably of stone, not hammered, especially in the small country cemetery, simple in design, making no pretension, and covered with our native vines. The same may be said of the chapel, and of all necessary out-buildings. In the larger cemeteries, especially those in close contiguity with a city, the entrance gate and chapel may be more imposing, and form the principal features. Throughout the cemetery thus inclosed the drive-ways and paths should be laid out as an appreciative taste and convenience shall dictate. No interior boundary or barrier of any description should be allowed to interfere with the general effect. In this way, the entire cemetery would present a park-like appearance, which is always pleasing, while the purpose to which it is consecrated would still be kept in mind by the monuments and gravestones rising on every side.

It is well if the inclosure combines with other attractions a natural sheet of water,

or, in default of this, a locality where, by the aid of abundant springs and judicious excavations, a lake of sufficient depth and size may be formed. We strongly object to the small pools surrounded by a border of hammered granite, and their surfaces covered with green slime, which are thought to be an ornament in many cemeteries. And while it may not be amiss to introduce upon the surface of the lake the graceful swan, it seems hardly appropriate to convert the spot into a breeding-place for a variety of domestic fowls.

Certain restrictions should be put upon the size of those unattractive mausoleums so often erected by those who would thereby seek to gain an amount of fame when dead that they failed to acquire while living. If possible, we would forbid the erection of a simple tomb above ground, not only on the score of beauty, but in a hygienic point of view, for in many cases there can be no doubt they exert a most injurious influence upon the surrounding regions. With the ancients, the erection of tombs was pardonable, for, as a general rule, they contained only the ashes of the deceased, placed in urns. If tombs are thought by some to be necessary, they should be entirely concealed from view. The grave is the proper resting-place for the body, except under some very peculiar circumstances.

So also any object which necessity may require upon the grounds, as a pump, for example, should not be made more conspicuous by attempts at ornamentation, either in itself or in the building which shelters it. On the contrary, it should be screened from view by plantations of trees and shrubs, or concealed by the drapery of vines.

Everything about a cemetery should harmonize, not only with the natural beauties of the place, but also with the purpose to which it is devoted. And it should be specially borne in mind, that while its design is to please by its quiet and unobtrusive beauties, both natural and artificial,

at the same time it must contain nothing which shall tend to destroy those better emotions which should be there awakened.

This I may illustrate by the following: In the early days of Forest Hill Cemetery, we well remember how much we were pleased with a simple and very appropriate little device upon which we came suddenly in rambling over the grounds. Just at the foot of a low hill, in a retired nook, and among some rocks, bubbled up a clear, cool spring. The small pool there formed had been slightly hollowed out, a few loose mossy stones placed about the edge, and upon one of them these words inscribed: "Whosoever drinketh of this water shall thirst again; but whosoever drinketh of the water that I shall give him, shall never thirst." A year or two afterward I revisited the spot, solely for the purpose of again seeing what had given me so much pleasure. But the hand of improvement had been there; the stones with the inscription had been removed, and in their place an iron pump reared its unsightly head.

Our remarks in relation to the public cemeteries generally, apply equally well to the country burying-ground. Burying-ground! the very name seems less pretentious than the word cemetery. And, after

all, there is much that is interesting in such a spot, unadorned by modern innovations. It is not a work of yesterday. Here lie many generations, their graves marked by the simple slab of slate, over which the parti-colored lichens have gradually extended, obliterating both name and date, while the frosts of many a by-gone winter have done their work too. The green turf extends everywhere; no formal graveled walks deface it, and no assuming monuments, inclosed with iron fences, disfigure it. What if it is what is termed a neglected spot! What if the wintry winds as they sweep across the lowly graves rustle the long withered grass and bend the rank weed of the previous summer, the thoughts of the afflicted are as often turned toward the buried loved ones, and when the spring comes the birds sing just as sweetly there as elsewhere!

Better let the old burial-place of the fathers alone than attempt any embellishment, which, at the best, seems out of character here. Let a new spot be selected, combining all the natural beauties possible, and let the hints which we have given be carried into practice and improved upon. So shall we have a model rural cemetery.

D. D. SLADE.

CHESTNUTHILL, Feb., 1868.

SOLDIERS' GRAVES.—We know of no record of a public cemetery where so much regard has been paid to the last resting-place of those who nobly gave their lives in our late national war as that of the Spring Grove Cemetery at Cincinnati. From a report of the Cincinnati Horticultural Society, which was the projector of the Spring Grove Cemetery, as the Massachusetts Horticultural Society was that of Mount Auburn, we copy the following remarks of Mr. Graham, who said he was reminded that Spring Grove has at present 700 of the noblest sons of Ohio sleeping beneath her sod. Every soldier's grave had been properly marked and reported.

One of the choicest spots in the cemetery had been set apart for their resting-place. All had been buried with the honors due their station. Among these were numbered many of the noblest men of our country, who in a spirit of heroic self-sacrifice had abandoned comfort, home, and friends, and had accepted in their stead hardship, peril, and death. He hoped the time was near when a suitable monument would be erected to their honor.

Mr. Resor remarked that many of the friends of soldiers buried here, coming to remove their bodies, had preferred to leave them when they saw how they had been buried.

A FEW WORDS ABOUT PORT WINE.

BY F. R. ELLIOTT.

AT this time, when so much interest is taken in the culture of the grape, and its manufacture into wine, together with opinions respecting grapes adapted to the production of certain classes of wine, and the manufacture thereof, with or without the addition of anything to the juice, a slight sketch of the vine district in which the Port wines are produced, and somewhat of its manufacture, may not perhaps be found uninteresting. These sketches, my readers will please remember, are made from my readings—I not having been so

fortunate as to have visited the region described in person—and they may be in some points imperfect, but generally, I think, truthful.

The first use of Port wine in England was exclusively as a medicine, supposed about three centuries since, and was then produced on the banks of the Lima, a river running into the sea at Viana, Portugal, where the first British merchants settled, and from whence they shipped it to England. Afterward, it was discovered that the grapes grown on the banks of the Douro



FIG. 40.—*View on the Douro.*

produced a richer and far more generous wine, and soon the merchants engaged in the trade settled at Oporto, from whence the trade has continued to this day. The amount of the vintage in 1749 was estimated at about 50,000 pipes, which has increased so that now it is rated at over 120,000 pipes.

THE WINE COUNTRY.

The wine country proper is along the Lower Douro—a stream called the Corgo

separating the Lower from the Upper Douro. Along each bank, for the distance of nearly thirty miles, and varying from six to eight miles wide, are the vineyards. Limestone rock, clayey slate, and red clayey soils compose the formation of the hills or mountains, sometimes so precipitous that it is no very easy task to climb them, as their elevation is many hundred feet above the river, with the vines planted frequently to their very summits.

Every hill is cut into innumerable ter-

races, the walls forming their sides being about five to six feet high, and composed of large stones—for any slight structure would quickly be washed away.

The situations regarded as best calculated to produce the richest grapes are those on the sides of the hills facing the south, and which enjoy the greatest quantity of sun; the lowest and most sheltered spots being in greatest esteem. The grapes growing near the summits of the mountains are more watery, and form a lighter and thinner wine. The labor and expense incurred in the formation of these vineyards may be imagined.

PLANTING THE VINEYARD.

Supposing the side of a mountain thus prepared, at the expense of much labor and capital, the planting of the vineyard is performed in the autumn, after the vintage is concluded, by taking cuttings from the old vines and placing them flat down, covering the butt ends only with earth, and leaving them so until they callus and form roots, when they are planted two feet deep in the ground and at about three feet apart. These vines take four to six years before they bear well; in the mean time they require much attention, many of them dying, notwithstanding great care is bestowed on them. Our planters in this country will remember this feature as applicable at times to their own practices, and I hope take courage from association, and not become disheartened under the impression that losses only accrue to them.

PRUNING AND CULTIVATION.

From what I can gather of the writer whose report I am condensing, no summer pruning is performed; but as soon as the vintage is concluded, the vines then having a mass of shoots are pruned on the single cane spur renewal system. Any failures are made up by layering a long shoot at the point desired to renew, and from these layers they gather a crop the following year. Trenches between the vines are

cut, and twice the ground is thrown up around the vines and loosened. The hoeing is done with a two-pronged hoe, similar to that used by the Germans in this country, the laborers working in gangs of about twenty, each upon a terrace, and all under the eye of an overseer.

GATHERING THE VINTAGE.

When once the vintage has commenced, time is invaluable; but this period varies in seasons, same as here, from early in September to the middle of October. Those who fear rain-falls and cloudy weather commence gathering early, even before the fruit is ripe, while the more bold and venturesome leave the grapes to hang as long as possible. During the gathering, the



FIG. 41.—*Grape Gathering in the Douro.*

vineyards are crowded with men, women, and boys — some plucking the choice bunches of sound grapes, some the rotten or imperfect ones, and placing them in baskets which are carried up and down the steep hills to the press by a class of Spaniards called Gallegos, who labor there only during the vintage, returning to their homes immediately afterward.

THE WINE PRESS.

The presses are constructed in buildings and vary in size; they are tanks about twenty feet square, and two to three feet deep, built of massive stone work, and

raised considerably from the ground. The *tonels* or casks into which the wine is run sometimes hold thirty pipes. They are generally in a lower building, so that the wine may run off from the press by a channel into them. Above the press is a vast beam, weighed down by a heavy stone, intended, by placing boards beneath it, to press the last remaining juice from the husks. Into the press the baskets of grapes are emptied as they are brought in, while a bare-legged urchin stands in the middle, and with a rake levels the bunches, and another picks out the bare stems or chance poor grapes, etc.

The grapes are sometimes separated from the stems, but the latter are said, in good seasons, in no way to injure the delicacy of the wine; and if the astringent quality so much admired in Port wine is desired, they are necessary; besides, they assist to aid fermentation. The mashing and pressing the grapes is performed by twenty or thirty of the men getting into the vat or tank with their trowsers' legs rolled up, and dancing, keeping time to the music of fifes, fiddles, and drums. The grapes are thus trodden under foot for two, three, and four successive days, with intervals only of six hours, or till the juice

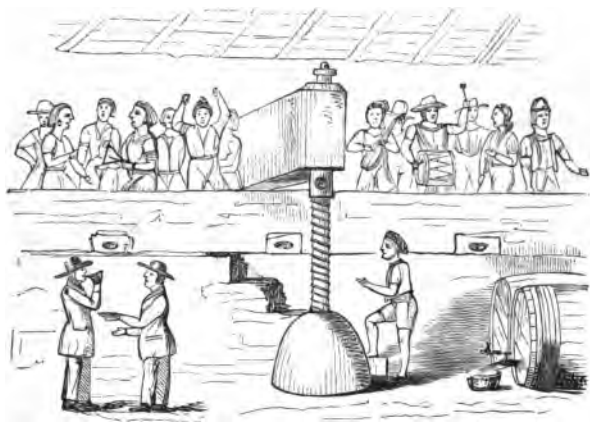


FIG. 42. - The Wine Press.

is supposed to be thoroughly expressed and the skin well bruised to extract the color, for it is in the skin alone the color is found. The wine is then allowed to ferment with the husks for about the same length of time, according to the greater or less degree of saccharine matter. The *must*, as the juice is termed, is then drawn off into the *tonels*, and *brandy* is added, when it is carefully sealed up till the winter. The husks are now pressed, and the liquid is designed for the use of the laborers, or for making into brandy.

The *Lagrima Christi*, a delicious white wine, is made from the first juice run

from the grape without pressing the skin. The impression of some persons, that *pure* Port wine has had no addition of brandy, it seems has no foundation; for not only is brandy added at the time of pressing, but afterward, before it is shipped, the merchant treats it to a little more *delicate brandy*, claiming that such is requisite to its keeping and retaining the characteristics desired.

The grapes grown on the Douro from which Port wine is produced, become, when hung up in the sun, perfect masses of sugar, and give to the wine a rich fruity flavor.

APPLE—MOORE'S EXTRA.

SPECIMENS received from James Truit, Quincy, Ky. Origin, Scioto Co., O. Tree, upright in nursery; spreading upright in orchard, with strong, stout branches; an annual regular but not profuse bearer.

Fruit, large to very large; form, round-

ish conical, flattened at ends—occasionally angular or one-sided; skin, smooth and glossy; color, clear light yellow ground overspread and splashed in sun with bright clear red, scattered minute raised russet dots with light suffused surroundings;

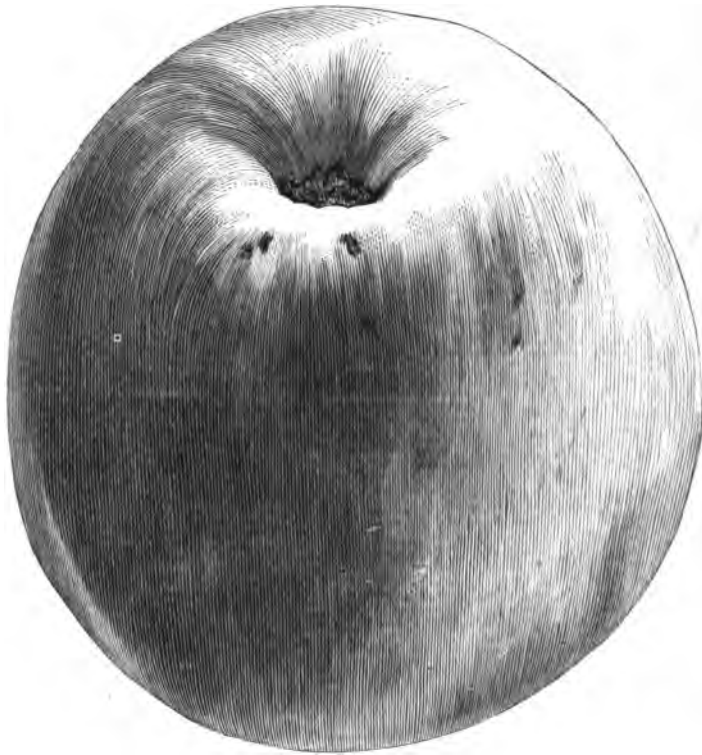


FIG. 43.—*Apple—Moore's Extra.*

stem, medium length; cavity, deep, open, russet at bottom; calyx, medium, open, segments divided; basin, deep, open, with surrounding broad furrows; flesh, yellowish, crisp, tender, rather coarse-grained, subacid, aromatic, "very good;" core, me-

dium or above, open center; seeds, very dark. Season, early winter or December and January.

These outlines show the varied forms of the fruit, the larger one being the most common.

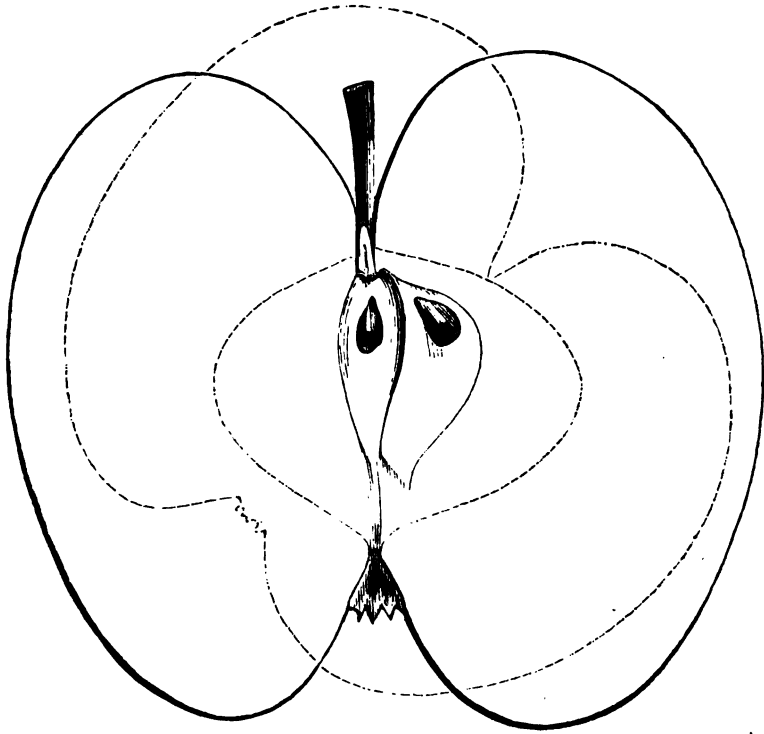


FIG. 44.—*Outlines of Moore's Extra.*

THE PASSIFLORA.

BY HORTICOLA.

THE tribe to which the *Passiflora* belongs is called, in the natural system of Botany, the tribe of the *Passifloracæ*. It belongs to the sixteenth class, second order, of the system of Linné.

The tribe of the *Passifloracæ* embraces the *Disemma*, the *Murucuja*, the *Napoleona*, the *Passiflora*, the *Smeathmannia*, and the *Tacsonia*. The *Disemmæ*, *Murucujæ*, and *Tacsoniæ* resemble so much the *Passifloracæ* proper, that formerly they all were called *Passifloracæ*, and that I need not separate them here, their general habitus being the

same as well as their treatment. The *Passiflora* proper consists, according to Decandolle, of eight groups, viz.: *As-trophea*, *Polyanthea*, *Tetrapathæa*, *Cieca*, *Decaloba*, *Granadilla*, *Tacsonioides*, and *Dyosmia*. I omit, however, here to describe the botanical differences of the groups from each other, because they are of no practical value to the amateur; they are interesting to the botanist only.

By far the greatest majority of them are natives of South America and the West Indies. Some few are found in the United

States as far north as Virginia and Maryland (*f. i.*, *P. incarnata*), and, as far as I know, in the island of Madeira (*P. Loweii*). The *Napoleona* and *Smeathmannia* belong to Africa. Nearly all of them are perennial climbers. Only a few grow every year from the root, the canes dying in the fall.

They are, with very few exceptions, most beautiful plants in every respect. The form of the leaves, their glossy color, in some kinds different on the two sides, and the great profusion in which they are produced, together with the climbing habit of the plants, would make them very attractive to many, even aside from their flowers and the edible fruit of some. The latter, though different in flavor, according to the kinds which bear it, is not palatable to some, if their taste should not have been *educated by early training*. But the flowers are so beautiful and elegant, so peculiar and striking in shape, so brilliant and varied in color, that even persons destitute of taste and obtuse in mind and feeling can not look at a blooming *Passiflora* without some admiration. Several years ago I had a large number of kinds planted out; sixty-one of them flowered together during the summer. They attracted the attention of those passing by to such a degree that they stood still to admire the magnificent and lovely sight.

The pious fancy of some people imagined to see the crucifixion of Christ typified in the flower of the *Passiflora*. They gave to each part of it a certain significance, derived from the cross and the crown of thorns, and they beheld it with a kind of religious reverence. This fact shows the unusual peculiarity the flower presents.

The size of the flower varies very much in different kinds. Some measure from five to six inches in diameter; others not much more than an eighth of an inch: some bear their flowers singly from leaf to leaf, toward the end of young shoots; others in long racemes—so I may be permitted to call them—often protruding

from the old wood: some are of a pure white color; others are blue, red, purple, brown, or have mixed colors in their different parts. Even should they be less conspicuous, they all will, on closer inspection, be found to be elegant. While many of them are inodorous, a good number are deliciously fragrant, only very few being fetid (*f. i.*, *P. filamentosa*).

I have been passionately fond of the *Passiflora* as long as I can remember. Before I came to this country I had a large collection of species and varieties. Hardly had I found a sure footing here, when I commenced hunting up every kind within my reach. Messrs. Parsons, Buchanan, Donadi, Cadness, Fuller, and others, will perhaps remember how often I applied to them, either personally or by letter, for *Passion flowers*. After I had brought together what was to be found here, I imported largely from Europe, until I was in possession of a hundred and thirty-five kinds. Dr. Regel, of St. Petersburg, Russia, editor of the *Garden Flora*, expressed in that magazine the belief that my collection was the largest in existence. Then, however, it had reached its culminating point.

Mr. Geitner, of Planitz, who died not long ago, sent me once a considerable number, carelessly labeled and packed. Unable to find out the names of many, and without any hope to accomplish this here, I turned away from them in disgust; for even the most beautiful plant without a correct name is of little value to me. Now, another difficulty arose from the fact that I had no green-house; my friends here having the management of such could not accommodate me any longer, retaining their old and getting new plants every year. Diffident in such matters as I am, I shrank from making an application to them, and they were prevented from offering me the services of their houses. Being left to my own resources, I lost a great many during the next winter, which sad circumstance compelled me to give up the

culture of the *Passiflora* with great reluctance and with an almost bleeding heart. In the attempt to get rid of them I succeeded admirably, beyond expectation. A certain firm in New York, not now in existence, agreed to sell them for me. I packed and sent to it 280 pots; they arrived in New York and—disappeared. The remembrance of them is perfectly pure, it being not tarnished by any monetary transaction, *for I never received a single cent for them.* But, no, I am not quite correct. Accidentally, some few had been overlooked in my garden, which were bought and honestly paid for by a gentleman in New York.

So far as *external* circumstances are concerned, I have enjoyed every opportunity of cultivating them. In Germany, I grew them under glass; here, I planted them out. I succeeded in dwarfing some; I grafted them; I propagated them by layers, cuttings, and pieces of the root; I hybridized and crossed them, and produced from the seeds sown some fine varieties. In the following article I will explain the method I have found to be the best by an experience of many years. In doing so I shall not consult any books, but write from notes and from memory. I wish I were able to induce many to cultivate so charming a tribe of plants!

[TO BE CONTINUED.]

IS THE SCUPPERNONG GRAPE *THE GRAPE OF AMERICA?*

So sayeth an enthusiastic gentleman of Iuka, Miss., who quotes an Episcopal clergyman as having "recommended it to the Southern people," and the New York *Watchman* as having "delightful memories of sweet scents borne on the breeze near Southern homes, where the Scuppernong is cultivated."

He further informs us that this grape "produces thirty-five bushels to the vine in Georgia, at Mobile in Alabama, Somerville in Tennessee, and on Tar River in North Carolina; that it never fails to bear, never mildews, never rots, is never troubled with frost, (?) is long-lived, and may be called the poor man's friend."

He also alludes to the Scuppernong wine as "sweet, rich, luscious, fragrant, very pleasant, and everywhere the ladies' favorite;" and gives us the simple process of manufacturing by first "expressing the juice," and adding "*a pint of whisky*, or brandy, or two pounds of white sugar, or a part of brandy and sugar to each gallon."

This makes out the case for the Scupper-

nong, except that "it requires no pruning, training, nor placing on trellis; while *all others* require study to prune, train, trellis, to prevent mildew, rot, or failure."

All this goes to show that this grape is very well suited to the mild climate of the Southern States. But America (meaning the U. S. A.) is a big place, not including Alaska and St. Thomas, not yet paid for. The Scuppernong grape—sometimes called the Mustang, Muscadine, Bullet, and the Bull grape—is found native in Virginia, and the States farther south; it is a rampant growing wild fox grape, with a large smooth stem, in this differing from other species; the leaves are round, thin, smooth on both sides, shining, especially on the under-side, dentated, but without lobes; fruit like the "Summer Fox" of our Northern swamps, in small bunches, with but few berries; thick skinned, tough, of a delicious flavor, and very sweet to the taste.

It is eminently a Southern grape; in their long, hot, dry summers it ripens its enormous growth and perfects its fruit,

which becomes "very sweet." North of the Potomac it loses all its valuable characteristics; it neither produces ripe fruit or ripens its wood; it mildews, rots, is troubled with frost, and is short-lived.

The assertion that it is "the grape of America" is published in a Northern paper, coupled with the remark that "it has *never* been tested in the North and West; and should it prove successful it would become a rich legacy in the hands of those who first propagate and introduce it." With all due respect to Mr. Miller, the Northern mind has already grasped and solved this problem—the verdict is TEKEL*—tried in the balance, and found wanting.

As a fox grape, it ranks with the Mammoth grape of Connecticut and the Charter Oak, producing fruit of similar character as to size, sweetness, and fragrance. This fragrance is to most persons very agreeable, while to others it is nauseating. The Scuppernong bears no comparison for excellence to the Early Northern Muscadine, which flourishes in our cold northern climate, always yielding a full crop, free from disease; but then the fragrance! says a friend at my elbow; yes, the fragrance. I reply: When I run for Congress on the Grape question, I shall treat my constituents liberally to Early Northerns, sure of the votes of the million, while the fragrance scoffers will form but a small minority. This will account for the enthusiasm of the traveler when he inhales the sweet scents of the Scuppernong near Southern homes.

Our Southern friends like it, and should cherish it until they find something more worthy of cultivation; and while advising the Northmen not to cultivate it at all, I recommend Southern cultivators for every Scuppernong vine to plant one hundred Concord, and as many Crevelings; and, if they like high flavors, to try the Early Northerns and Hartfords. Our Northern

grapes all do better at the South than theirs do with us. Mr. Rountree informs me that the Concord is his most estimable grape at New Orleans; besides growing finely and becoming of high quality, he readily gets one dollar per pound for his surplus, because of its earliness. In the Southwest the Concord is said to make a fine vine. It may therefore be assumed that it will grow equally well at the South; and if so, combined with the Scuppernong for its boquet, the long-cherished idea of the illustrious Longworth may be realized, to produce a pure, high-flavored American wine.

The writer of this has lived in and traveled much in the Southern States, but has never had the pleasure to taste a glass of good Southern wine. That inevitable "pint of whisky* to each gallon" is worse than the rot or the mildew, and, as Mr. Miller states, "makes an exceeding strong drink, which readily induces intoxication." Surely this can not be the ladies' favorite? Then why not try to make pure wine from the juice of the Scuppernong? and if it has too little grape sugar,† or too much tartaric acid, combine and ferment it with the juice of the Concord or Clinton, which will supply the deficiency; but as for the whisky, better drink it with your tea than to spoil your wine with it.

ROTUNDIFOLIA.

* The writer was invited to take tea with a gentleman and his family, with a few friends of both sexes. After the first cup of tea was handed around, the host suddenly recollected that he had forgotten to take the gentlemen to the side-board, and made profuse apologies, and then added: "It is not too late yet." On our declining, he first offered to each lady, then to each of the other gentlemen, who all declined. Then he added: "This will never do. How could I be so negligent of hospitality?" So, taking the bottle in his hand, he came up and poured a quantity into my tea-cup, saying, "I am told that whisky and tea go very well together." The same idea may prevail as to wine.

† Analysis of Scuppernong grape juice by Dr. C. T. Jackson: Grape sugar, 9.8 per cent.; tartaric acid, 1.7 per cent.

* Daniel v. 27.

OGDENSBURGH APPLE.

In the fall of 1858, Hon. A. B. James, of Ogdensburgh, N. Y., being in Milwaukee, purchased an apple in market, which he thinks resembled the Winthrop Greening. He saved the seeds and planted them the next spring. Of the seeds which grew, all but one were so full of thorns and evinced so wild an appearance that they were de-

stroyed. That one grew stocky, and spreading like the Fall Pippin, with a leaf much like Red Astrachan, its young wood being a dark, rich, reddish brown, with many light gray specks, short-jointed, and its buds prominent, rounded. Soil, a sandy loam over a subsoil of hard-pan.

The variety fruited for the first time in

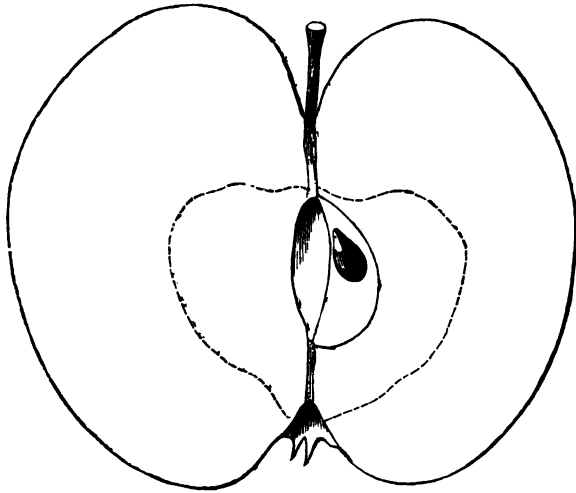


FIG. 45.—*Ogdensburgh Apple.*

1867, producing about fifteen specimens, from examination of which our drawing and description have been made.

DESCRIPTION.

Fruit, medium size, globular, generally smooth and regular; but some specimens are broadly corrugated. Skin, smooth, glossy, almost oily, like Belmont. Color, clear light yellow, with brownish red blush when fully exposed to sun—small gray dots in some of the specimens; these dots seem to present an appearance in part

as of decay. Stem, very slender; cavity narrow, smooth, moderately deep. Calyx, closed, with long-pointed divided segments; basin moderately deep, abrupt, slightly furrowed. Flesh, white, crisp, very tender, fine grained, mild, pleasant, rich, subacid—"best." Core, medium, slightly hollow in center. Seeds, broad, very dark brown. Season, late fall and early winter. This is an extremely delicate amateur apple, too tender for market shipping. Of great promise for private use.

LAKE SHORE GRAPE-GROWERS' SOCIETY.

THE annual winter meeting of this Society was held in Cleveland, 19th to 21st February, and, from the reports received, was well attended. The subject of growing grapes, inasmuch as it comes home profitably to the interest of the grower, must of course interest a large number, and especially in those sections where grape-growing is one of the most successful and profitable crops of the land.

In the discussion on varieties, we notice the Catawba, for the Lake Shore, stood as one of if not the first. The Delaware had a good show when in rich soils and well cultivated; and Norton's Virginia was spoken of as valuable for red wine.

Mr. Lewis, of Sandusky, read some statistics regarding the yield of last year in that vicinity, as follows:

Lbs. table grapes shipped from Sandusky last year.....	1,822,000
Lbs. wine grapes shipped	260,000
Gals. wine pressed at Sandusky, Peninsula, Catawba Island, Kelley's Island, Bass Islands.....	400,000
Lbs. of grapes from which the above was got.....	4,600,000
Total grape crop of 1897, lbs.....	6,682,000
" money value.....	\$750,850
Yield per acre, average, 2 tons; or a cash value per acre of \$227.	

There were some other varieties of grapes included in the above, but the great balance was stated to be Catawbas.

The subject of keeping grapes was freely discussed, and from it we extract as follows:

"Mr. Saxton had kept his grapes in a cool room—a dry cellar—as cold as could be without freezing. They were as plump now as in October. The grapes must be ripe first, he had learned, and then they could be kept easily. He thought fruit would keep better in a dark room than in a light one. His grapes would keep two months yet.

"Several instances were related of keeping grapes in layers, with cotton batting or paper between the layers. One man in Lake County, as related by Mr. Harrison, of Painesville, packed in saleratus boxes, with paper between the layers. Part he put on high shelves in his cellar, and part near the cellar bottom. The former were badly shriveled, while the latter were plump. Both were well preserved, however.

"Mr. Wadsworth, of Madison, Lake County, said his grapes were raised on gravelly soil. Last year they ripened well; were gathered and laid on a packing-table till the stems were withered, and then they were packed. They were kept in a cool cellar.

"Dr. Dunham said that grapes, the must of which would weigh 90, would probably stand a temperature of 27 degrees. Another gentleman said that he had tested the temperature in his grape-room and found it to be 16 degrees. Still another gentleman confirmed this statement in another instance.

"Mr. Lowry said he used to try to keep grapes in cotton batting, setting them in a cool room. When one grape would rot, the juice would be communicated to others by batting. Cotton cloth remedied this, as it would not carry the juice from a rotten grape to sound ones. Catawbas keep better than Isabellas or Delawares. If grapes are shipped when the weather is pretty hot, with frequent showers, they are pretty sure to spoil.

"Mr. Griffith said the whole thing was to keep the grapes dry and cool. They should be kept at least three days after picking, filling the boxes half full; set them in an open room; then, after setting three days, remove every grape that is loose, and the rest would keep without trouble. He always kept his grapes in an

upper room. They must be ripe, and packed with care.

"Mr. Caywood, of Poughkeepsie, N. Y., said it was not thought to pay to keep grapes. He had the experience of two men who had tried it for years, and had become convinced that the cost of buildings, etc., for keeping, was more than enough to overbalance the profit.

"Mr. Swan, of East Cleveland, referred to the keeping of grapes in fruit-houses, both in Cleveland and in New York. The temperature in these fruit-houses was stated to be 34 degrees the year round.

"Dr. Dunham said that two years ago his grapes were bought to put in the fruit-house in this city. Mr. Nyce had them picked before he (Dr. D.) wanted them to be picked. They were not fully ripe. They did not keep."

A report was made of the weight of musts, but as this has all been recorded and published in Mr. Elliott's article, in our December number, we do not copy it.

The subject of wine-making was brought up by a few one-ideaists, and after some discussion we notice Prof. J. P. Kirtland, with cool, discerning judgment as to its ultimatum, moved the subject "be referred to the temperance societies, as it might be discussed in the Grape-Growers' Association (where it was out of place) for a century, and never reach a conclusion.

During its discussion, Prof. Rhodes, whom we know to have a knowledge of what he affirms, spoke as follows on this point:

"He had last year been in Ireland, Scotland, England, France, Belgium, Holland, Switzerland, Italy, Bavaria, the German States, Russia, etc. He had very distinct impressions of the drinking habits of the various people. In Ireland, you will see whisky; so in Scotland and England. He saw much drunkenness in these countries—more than in this country. The use of the whisky and strong ales in Great Britain produced more drunkenness than in America. In France, he was struck

with the abundance of wine and the little amount of intemperance. The wine is cheap—about ten cents for a quart. This is put with water, and with bread makes the food of the common people. In Belgium, beer and wine come in competition. In Holland, beer is used, also in Switzerland. In Italy, again, there is wine; then again, in Germany, you come to beer again. He saw no drunken men in beer-drinking countries. The beer in Germany has only 2 per cent. of alcohol in it. People on the Continent do not seem to drink as they do in England, merely for the animal enjoyment. It is a part of the social enjoyment of the people. They do not stand up to drink, but sit and read or converse while drinking. He thought the people frequently got drunk on wine. But they were brought up on it; children four or five years of age drank wine and water mixed. In times of great festivity, like the gathering of grapes at Baden, there may probably be some excesses that would never be seen at other times. He thought temperance would be promoted best in America by reform in two respects. First, reform the manner of drinking—not gulp down a glass of whisky in a minute. Second, introduce pure wine and beer, such as is used in Europe. He did not think temperance would succeed on the total abstinence principle. It never had succeeded in any country. Where the use of wine is almost universal, he saw no drunkenness. He thought he was in places where he ought to have seen intoxication if there had been any. He thought the freedom of social life in France affected the temperance habits of the people. They could get wild amusement and excitement almost free, and need not go to strong drink to satisfy the natural cravings for some excitement. In England, where people are kept most closely confined at work, there is most drunkenness; after working twelve to fifteen hours, the men gravitate naturally to drink.

"In Europe, he saw no such cases of

dyspepsia as we have here, and he thought the use of wine beneficial. In Paris, beer drinking is increasing very rapidly, but he saw no bad effects. The police regulations of Paris against adulteration were very stringent. He regarded it the duty of a man abroad to see life in every phase, and he took occasion to go to all sorts of places, to see the people in their worst phase. His conclusions were made up from observations taken in all places."

CLIMATOLOGY OF NORTHERN OHIO.—A very able paper was read by Geo. C. Huntington, of Kelley's Island, on the Climatology of Northern Ohio; and while in the main it was correct, we consider some of the points, from which records were kept for its making up, as unreliable as to the actuality. The object of the essay appears to give an impression that Kelley's Island is superior to any other section of country for grape-growing, and to sustain it records are given, taken at Toledo, which is inland from the lake, and at Cleveland by one whose residence is in a low section, away from any immediate lake influence. We like to see these essays—we like to see the mind of man at work; but the time has gone by when any attempt to set Kelley's Island above all the earth for a fruit region will prevail; and any such attempt on paper simply shows a want of practical extended observation.

SOILS OF THE LAKE ERIE SHORE.—Some discussion occurred on grape soils, but we gather nothing of value from the report except the following, by Prof. J. P. Kirtland:

"Alluding first briefly to the Lake Shore climate, he proceeded to the subject of soils. No perfect analysis of soil from Kelley's Island and to Erie Co., N. Y., had ever been made. The shales of these localities, and the clays, came once from what is now the bed of Lake Erie, scooped out, Agassiz says, during the glacial period. On the soil thus formed the grapes are now grown. The analysis of Prof. Emmons of the wood and bark of grapes was

read, and the speaker said that according to Prof. Liebig's theory, no vegetable growth could be had on soil in which any element found in the vegetable was absent. Grapes, therefore, could not be grown on any soil which did not possess all the elements found in the vine by Professor Emmons. The soil about Cincinnati had enough lime and potash to sustain grapevines for a few years; but after some years' cultivation the vines began to show signs of starvation. Then mildew or some other disease attacked the half-starved vines. On new land, the healthy vines might have resisted the attack. There are places—some of them in this vicinity—where the grapevines will last after we are dead and gone. There are others where a few years will see the vines growing sickly and unprofitably, and dying. The soil about Cleveland contained plenty of lime—he had found a bed of plaster of Paris on his own farm. Every 100 lbs. of the shale of the Lake Shore contains from 7 to 15 lbs. of potash in the mica, which forms about half of the shale. Chloride of soda was found in the old deer licks all along the Lake Shore. Sulphur plays an important part in the nourishment of the grape, and it is found here in great quantities—so much that it is now contemplated in this city to get sulphur from the shale of the Lake Shore, instead of importing it, for making sulphuric acid. In answer to an inquiry, Prof. Kirtland said, to manure sandy grape land, put on a dressing of about two inches of broken shale. At Kelley's Island and Sandusky, when the three or four feet of shales are exhausted, they must supply the loss somehow. But from the mouth of Huron River, Erie County, O., east to below North East, Pa., there is an exhaustless bed of shale. Grape-growing in this region must be permanent. At Kelley's Island there is no certainty of permanent grape raising. From Cleveland to Avon Point he knew every inch of ground, and take that strip a mile wide from the lake, you will find it

the richest in the organic elements for grape culture to be found this side of New Mexico and California. The strip may be four or five miles wide from the lake in

some places, but it would be too far from the lake to get the influence of the water. There is but one soil—the clay soil—for grapes.

A NATIONAL GIFT.

SEVERAL of our associates in the advancement of horticulture have spoken of the magnificent gift bestowed by the Hon. Marshall P. Wilder upon the floriculture of this country by a deposit of more than one thousand choice and rare plants in the care of the Massachusetts Agricultural College Institute at Amherst, Mass.

It is not the present value of these plants—that could be measured by dollars and cents—which gives import to this gift of one of the noblest and best horticulturists which the world has ever known, so much as the item that by it we have a precedent—which we hope will soon be followed—whereby men of taste and wealth shall give of their rare and long life-cherished products freely to the demands of every lover of Flora—shall place, without regard to recompense, and with expectation only of perpetuation, for the public good the results of their care, knowledge, and life-long practice. It is these points, not the mere cost, which to the horticulturist renders this gift especially valuable and calls for his blessings upon the giver.

It is well known Colonel Wilder has for many years, while devoting a large share of his time to the testing of fruits for the benefit of the public, found time, because of his love thereof, for the care and propagation of Flora's offerings. In this pursuit, sparing no expense or labor, he provided himself at once with the germs which his study dictated for the production of new and valued flowers. As long ago as 1839 he purchased of Floy his original seedling camellia named *Florii*, and it is now in his greenhouse, over fifteen feet high and seven feet across. From this, by crossing, he produced the celebrated Abbey Wilder,

the original plant of which he yet retains; but the propagated stock was years ago sought for and purchased by European growers, at a high price, because of its great superiority over anything they had, with their hundreds of years' practice, accomplished. Continuing his love of the subject, and his practice, he has from time to time produced rare and superior varieties, until at this present time his list of seedlings, dedicated with respect, love, and remembrance to the members of his family, will outvie any collection of camellias known to commercial gardens. There has been now one of each of them, together with hundreds of other rare and beautiful plants, deposited with the trustees of the Massachusetts Agricultural College, to whom we may look for their propagation, dissemination, and perpetuation.

The list of seedling camellias produced by Mr. Wilder numbers eleven distinct and superior varieties, and while all are beautiful, two have been sought for, purchased at a high price, and the stock, with exception of the parent, carried abroad. There is one among those now sent to the Massachusetts College which demands a special notice, and the obtainment, if possible, by all of Flora's votaries. It is named after the woman who has cared for him in his sick hours, when all the horticultural world were daily anxious for a favorable record, when a want of care and attention of but an hour from her would have lost us the man we all esteem—his estimable wife, Julia. The flower is in form regular, symmetrical, imbricated, a rosy flesh color, say two shades darker than Lady Hume, each petal tipped with a lighter shade and striped with lake.

THE CLAIMS OF HORTICULTURAL SOCIETIES.

RECENTLY, the propriety of taking some steps toward the organization of a horticultural society in the Empire City was suggested in your pages. It appears that the want of some such society was felt by a writer in the *American Agriculturist*, and the Editor of the *HORTICULTURIST* expressed his willingness to co-operate in the movement.

It was far from the purpose of your correspondent to say a word to dissuade from any judicious movement for the promotion of horticulture, or for the mutual enjoyment of its friends in New York, and I hoped that other correspondents might take up the topic and discuss the possibilities of forming an association suitable to the time and the people; but the matter has been permitted to rest there.

To prevent any misconception, I desire to amplify my remarks on the probable causes of the failure of the old New York Horticultural Society, and the want of encouragement which attends all such societies at the present time. We have ample proof that the spirit of the horticultural public has found its way into other and more pleasing channels, for with the most earnest and persevering efforts, at best, the results come far short of the reasonable hopes of the promoters.

The New York Horticultural Society had a very respectable record; among its incorporators were many worthy and eminent men. During the brief period of our participation in its operations it was merely struggling for existence. In 1852 it held a very fair exhibition, and there we witnessed the fruitful cause of the discontent which creeps in among professional gardeners, and which — too common in all horticultural exhibitions — eventually works their ruin. In 1853 it held a fair exhibition, but not such as to encourage the Society. Yet it managed the same

year to inaugurate the holding day of conversational meetings at which essays were read and discussed. Finally, an exhibition was arranged at Barnum's Museum, which it appeared did not surpass in profit any of its predecessors. From that time we ceased to take any active part in its affairs, but we know it continued in operation to a much later date. The good people of Brooklyn about that time became strongly interested in horticultural displays, and drew over the exhausted though persevering friends of the New York Society.

And though the Brooklyn Society was for a time full of high hope and animation, and carried its measures steadily forward for the encouragement of taste and skill, yet it, too, waned, and we look in vain for any symptom of life in its once energetic frame.

We could not have been induced in 1854 to believe that in a few brief years all the brilliant schemes devised to bring together the best and most skillful amateurs, as well as gardeners, and their meritorious products, for the view and admiration of the people of two great cities, would prove fruitless, and the exertions of high-spirited and liberal men be rewarded by oblivion to the claims of a society for the advancement of rural art and taste.

The truth forces itself upon us, that horticultural societies on the old model are wholly unsuited to the wants of the present time, and not in accordance with the American idea, at best.

We are independent now of all such extraneous efforts; horticulture has taken a vital hold of the community. We see its footsteps along our rural thoroughfares. In the busy market-places of our cities *FLORA* has established her claim to a position.

The comfortable mechanic who has means prefers a few rods of ground at a distance from the busy city if he can reach

it, and with the aid of one of the thousand cheap instructors he commences to work a little garden.

The merchant, in the flowery season, can not be coaxed into the hot city to witness an exhibition; he prefers seeing the garden in its place, and chooses a quiet stroll through lines of glass structures, filled with choice exotics, at the country seat of a friend, to the display of long

tables of tricked-out specimens in array, staked and labeled.

But I may be mistaken. There are still duties and functions left for horticultural societies to perform. True; but these have no claim on the *beau monde*; they appeal alone to the thoughtful and interested student of the fair vegetable kingdom, and such are the horticulturist clubs referred to in your January number. A MEMBER.

THE AMELIA PEACH.

IN the HORTICULTURIST for December, 1867, Mr. F. R. Elliott describes a peach—exhibited by Mr. George Husmann, of Hermann, Mo., to the Committee on Seedling Fruits, appointed by the American Pomological Society, at their late meeting in St. Louis—which is called the Amelia peach, the original tree of which is now growing in Mr. Husmann's grounds.

Mr. Elliott regards this peach as of such value that he took a drawing of the fruit, and gives a full description of it.

As his report will be published in the transactions of the American Pomological Society, I wish to call his attention to the fact that the name Amelia has already been appropriated for a peach of very superior quality; and it would therefore be better to change the name of Mr. Husmann's seedling, in order to avoid the confusion that will exist when the fertile regions south of "Mason and Dixon's line" are satisfactorily reconstructed, and pomologists from that section are induced to co-operate with the American Pomological Society in their future meetings.

The original Amelia peach is described by Messrs. Peters, Harden & Co., of Downing-Hill Nursery, Atlanta, Ga.; by Mr. Jarvis Van Buren, of Gloaming Nursery, Clarksville, Ga.; and by Mr. P. J. Berckmans, of Fruitland Nursery, Augusta, Ga., in their several catalogues issued in 1858

to 1861. Mr. Berckmans describes it as, "A Southern seedling of the highest excellence; large, very juicy, and high flavored." Messrs. Peters, Harden & Co. say it is, "Size, large; yellow, with dull red cheek; freestone; flesh, yellow, juicy, and high flavored. The season for this peach is placed in July, after the Tillotson and Early York have passed, and just as Crawford's Early begins to ripen.

Mr. Downer, of Forest Nursery, near Fairview, Todd County, Ky., in his catalogue for 1867, also describes the Amelia peach as, "Very large; skin, dull greenish white, red cheek; flesh, white, melting, juicy, rich, and excellent; the best of its season; free." Mr. Downer, in a list of select peaches arranged in the order of their ripening, places the Amelia as next succeeding Hale's Early, Early Tillotson, and Early Newington. It is therefore evident that he has the true Southern variety, notwithstanding the discrepancy between his description as a white-fleshed and the description of it as yellow-fleshed in the Georgia catalogues.

No one person has tested more fully and more thoroughly Southern fruits in Kentucky than Mr. Downer, and for correctness and accuracy no one is more reliable. Years ago he found out that in this latitude many of the Northern fruits ripened prematurely, and that it was necessary, in

order to have a perfect succession during the year, to select from the seedlings of the South such as were best adapted to the soil and climate of Kentucky. In this way he obtained the Amelia peach, and has extensively propagated and disseminated it as a Southern seedling. If this season permits the fruit to mature, Mr. Berckmans and Mr. Downer both should send specimens of the Amelia peach to Mr. Elliott, and as-

sert the priority of the claim of the Southern seedling to the name, and at the same time establish the fact as to whether it is a yellow or a white fleshed variety. Meanwhile I trust, sufficient evidence has been produced to show that Mr. Husmann had better select some other name for his seedling before it is disseminated, and while the change can be made without much trouble or difficulty. T. S. K.

THE SALEM GRAPE—WHAT IS IT?

THE information which has been given of this grape, through the press, seems to be of a very conflicting nature, and I think it would be well for the parties who are now engaged in its dissemination to explain if they can.

It is announced as Rogers' No. 53; and yet Mr. Rogers admits that it was originally given out to some friends as No. 22. While he does this, however, he claims that 16, 17, 22, 45, etc., have thus far been withheld from sale, and will be offered at a future time. This has puzzled me.

Mr. Rogers' original description of the color of No. 22 was "amber." No. 53 he describes as "light chestnut or Catawba color." In *Hovey's Magazine* for October last, Salem is said to be regarded by some cultivators as "so much like No. 4 that it is difficult to distinguish them."

I. M. Ives, of Salem, Mass., who says he is well acquainted with this variety, describes it as "same color as No. 15," which is well known to be red or copper color. In

the *American Horticultural Annual*, recently issued, it is described as No. 22 of Rogers' Hybrids, "blue, with a brownish tint."

Here we have what purports to be the same grape, not only described under two different numbers, but as being variously blue, black, amber, chestnut, and red; one says it is like No. 4, which is black; another says it is the color of No. 15, which is copper color.

I am aware that it is not uncommon, nor strange, that different persons disagree somewhat in describing the color of a grape, or any other fruit; this is accounted for sometimes from the condition of the fruit as to maturity, or other circumstances affecting the color, and often from the peculiar language or similes employed in the description; but the discrepancies alluded to, regarding the Salem, are too great to be reconciled on these grounds, and ought to be cleared up, as I hope it can and will be.

GRAPE-GROWER.

A CURIOUS FACT.—W. C. Flagg, Esq., one of the best horticulturists of the Western States, writes that, "It is a curious fact that out of forty-one varieties of apples approved in ten or more districts by the American Pomological Society in 1864, eleven were recommended by Coxé half a

century ago. These are: Early Harvest, Large Yellow Bough, Summer Queen, American Summer Pearmain, Summer Rose, Maiden's Blush, Rambo, Fall Pippin, Yellow Bellflower, Esopus, Spitzenburg, and Newtown Pippin."

PENCIL MARKS.

MR. EDITOR: Under the above heading I propose to send you a few occasional thoughts, from time to time, which, though coming to you in ink, I assure you are first thrown off in pencil.

How MUCH FRUIT IS ENOUGH?—"I think my family canned enough fruit last season to enable me to have it on my table every day in the year."

Such was the remark made to me a few days ago by my neighbor L—. It certainly was what but very few, even of our most enthusiastic fruit-growers, are able to say. And the facts led to some reflections which will bear stating here.

Neighbor L—, we will admit, has as much fruit as he and his family will be likely to consume the year round. I supposed that my own family was pretty liberally supplied also; but his far exceeds mine; and I am quite certain that mine as far exceeds that of one half—yea, of nineteen twentieths—of my neighbors. I might put it in a still stronger light, and say, that while one family in a community have as much fruit as it will need or can consume, with a moderate daily use, there are not less than one hundred families who do not consume over one quart weekly.

What utter nonsense, then, for men to be croaking about the superabundance of fruit, the prospect of over-stocking the market, and all such forebodings of evil to fruit-growers. And yet every community has one or more of this class of old fogies. I remember just such in my boyhood; and yet people have continued to plant, till the quantity is ten-fold greater everywhere, and the price has continued to advance. And even now, a large portion of the people have yet to learn that the small fruits—to say nothing of apples—can be made a part of their legitimate daily food.

How long before all the people will be as well educated up to the use of fruit as is

my neighbor L—? And how much will be enough to supply the country when that time shall arrive?

WINE—A MODE OF MAKING IT.—I do not profess to be posted in the methods of wine manufacture—not even with any method. But I have lately become acquainted with a mode adopted by one of my neighbors, which I propose to report to your readers, and leave them to decide upon its value, and the correctness of the reasoning which induced him to adopt it. The method and reasoning are these, as far as I can state them:

The ripe grapes are first mashed in a tub or vat, where they are allowed to remain till active fermentation ensues. They are then *drained*—not pressed—for a given period. The liquid thus obtained is carried to the cask intended for it, and allowed to continue its fermentation through a syphon. This first drawing he calls his first-class, or No. 1 wine.

He next adds to the grapes, still in the tub, water and sugar, in quantity, as he says, sufficient to give the mass as much sugar as it had in the beginning. This he also drains off, after fermentation, and places in another cask, to be treated as the first. This makes his No. 2, or second quality of wine.

The grape mass is still to undergo a similar process for the third, and in some cases the fourth time; draining, not pressing, each time. This make his third-class of wine and vinegar.

Now for the theory, if I can succeed in stating it. Nature, in the process of ripening the grape, has only prepared a portion of the juice for wine; while that retained in the pulpy or cellular portion has yet to be disengaged or set free by fermentation. His theory is, that this fermentation disengages it; and draining is preferable as a means of separating it rather than press-

ure, which also brings out the pieces of the skin and harder substances.

Now, Mr. Editor, will you, or some of your wine-making correspondents, tell us what you think of my neighbor's mode of wine manufacture, and what will be the character of the wine manipulated in that way?

I will add that I have seen a half-dozen specimens of his vintage of 1867 made as described; but as I am not a connoisseur, I can express no opinion of their quality.

NOMENCLATURE.—*Mr. Editor:* Are we to forever have such an utterly Babylonish confusion in our horticultural nomenclature? Is there ever to be—can there be—any plan invented by which the naming of our fruits can be reduced to a system? Is there any scientific principle that can be applied, and which can be made effective in restoring such a chaos into something like order? I confess to an utter inability to see it; and yet to my mind a great necessity exists for the inauguration of some method. The subject has doubtless often engaged the attention of the fathers of Pomology long ago, but I take the liberty of urging them once more to give the subject a thought.

Take the apple list, for example, and you are treated to names descriptive and non-descriptive; outlandish and heathenish; good, bad, and indifferent; pronounceable and unpronounceable; you find many good and very appropriate names; but you also find "Black Coal" and "Sheep

Nose," "Gate" and "Fill-basket," "Sine Qua Non," "Seek-no-Further" and "Stump the World." Inappropriateness of names is not the worst, perhaps. You find an apple known by one name in one section, and by another in another section; in others, by a third, a fourth, and so on, to a bakers' dozen; so that you may make a dozen purchases from the nurseries, and only have one apple at last.

I see no remedy for this evil, unless it be in the Societies taking the matter in hand, and by a standing committee, or in some other mode, assuming absolute control over all our nomenclature. "But," says one, in utter dismay, "have I not a right to the naming of my own bantlings? If, by my own good fortune, I succeed in producing a fine variety of apple, or peach, or grape, have I not as good a right to give it a name as I have to name my own son?"

Let us look a little into this. If you are so foolish, or softly, so indiscreet as to name your boy Beelzebub, there ought to be some supervisory authority through which it may be changed. And there is; the Legislature of your State has the right to change the name of your son without asking your consent. And so, I hold, there ought to be some high authority by which the names you give your fruits may be supervised and changed.

But, conceding the absolute right to rest in the Societies or in a committee, there is still the lack of uniformity and system.

QUEVEDO.

DRAWINGS AND COLORED PLATES OF FRUITS.—In a former number of our journal we took occasion to draw the attention of our horticulturists to the value of Joseph Prestele, Sen., of Amana Homestead, Iowa, as a capable delineator, and one on whom patronage would be most worthily bestowed. We are not disposed to advertise free for any one able to pay, but we favor and appreciate talent, and when capacities

of a high order have been overlooked and suffered to be comparatively lost, believe in bringing them before the public for the public good. We have never met Mr. Prestele; but when such men as the late A. J. Downing and Prof. Asa Gray employ his talents and taste over any European delineators, we feel that we are right in directing the attention of those who desire careful and accurate work.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 87 Park Row, New York.



THE AGRICULTURAL DEPARTMENT AT WASHINGTON.—The guiding power of this Department has, by reason of the death of Isaac Newton, been changed; but whether it will be for the better, so far as horticulture is concerned, remains to be seen. The Commissioner has, however, done one good thing in extinguishing the seed department according to the old programme. We know not what course will be pursued, and have kept back our remarks a certain time, hoping to see some shadowing forth of a programme of operations; but nothing of the kind has come to our knowledge, and we are therefore left in ignorance of what is designed to be performed by the Department or expected in aid thereof from the people. It is barely possible the present Commissioner, like his predecessor, imagines he can run the machine without aid or favor of the people at large, and regardless of the bearings or tone of Agricultural or Horticultural journals and societies; but our knowledge of the man is such that we can not believe it of him, unless swayed by the harpies which ever congregate around public officers.

What he shall or ought to do in Agriculture we leave for our Agricultural journals to say; and, by-the-by, we imagine they are like ourselves waiting to see if *anything* is to be done. But in Horticulture and Pomology we desire to offer one word of suggestion as to a course which the Department might adopt, and aid very largely the public good. It is in checking the introduction of any new variety of fruit or flower unless of a superior character. The rules of the American Pomological

Society make it obligatory that a fruit shall have some superior characteristic over a known kind in order to receive notice or be entitled to record; but, unfortunately, it has no means to pay for knowledge which shall decide the point, and hence its rule falls to the ground. The department of Agriculture, by establishing and entertaining a Bureau of Horticulture or Pomology, might employ one capable man with, in case of a new fruit or flower, power to call in aid two other men to examine any and every new fruit or flower or vegetable in its native locality, compare it with others known to the committee, but perhaps unknown to the originator, and report thereon. The same with all new grains, vegetables, etc., and thus check the present increase of fruits, grains, vegetables, etc., which are thrown upon the good-nature of the public at high prices without corresponding qualities, by the interests of designing speculators or from innocence by want of knowledge of other and superior named sorts.

Again: we all acknowledge the laborer worthy of his hire, and the producer of a new seedling fruit, grain, or vegetable as worthy a full recompense; but too often some speculator reaps the gains, while the originator, by reason of want of means to pay for advertising, or perhaps a modest hesitancy to publish himself, has nothing but a self-consciousness of having originated a good thing, to plethoraize the pockets of some charlatan operator. We would that the Agricultural Department should buy any and every really valuable new grain or fruit, etc., if possible—propagate it one or

two years, and then disseminate it, either free or at a nominal price within the reach of every poor man. The committee of observation named above should decide as to the value of these new sorts, and, failing to convince the originator, should offer a comparison open to examination of the public. In view of discarding a variety, they should fully and plainly state reasons therefor, and the same in advocating a new sort, giving the names of varieties with which they have compared and classed it.

Thus we have named one item covering considerable ground that in our view the Agricultural Department might do to the advantage of the public good, and hereafter we may speak of other points that would aid in making that Department a head instead of as heretofore a tail to Agriculture and Horticulture, a credit instead of a disgrace to the United States of America.

ROGERS' No. 4 GRAPE.—This 22d day of February, 1868, we have eaten of the Rogers' No. 4 grape in as perfect condition as when gathered from the vine in October last. The fruit was kept in an ordinary fruit cellar, in an open box, and the berries were a little shriveled, but yet clung firmly to the bunch, and were sweet, sound, and good.

SOUTHERN ILLINOIS FOR PEACHES.—The amount of peaches grown and shipped from southern Illinois to points north, east, and west can with difficulty be estimated. From the address of the President of the Centralia (Ill.) Fruit-Growers' Association we gather that Marion County alone shipped last year over three hundred thousand boxes of peaches. Other points, it is estimated, more than doubled this amount.

BOILING GRAIN FOR FOWLS.—Experiments have proved that there is considerable economy in boiling corn and barley when feeding them to fowls, but that there is no saving in soaking oats or buckwheat.

IOWA AS A FRUIT-GROWING STATE.—From a report made by W. W. Beebee, secretary of the State Horticultural Society of Iowa, to the Legislature, with a view to obtain aid and assistance in favor of fruit-growing, we extract the following:

"The great questions, whether our noble Iowa will ever become a fruit-growing State; and whether and when its broad and beautiful prairie slopes will be lined and their summits crowned with artificial groves of timber; and whether our home grounds shall be tastefully ornamented and thereby made choice and attractive, are prominent among the momentous questions that our Society was organized to solve.

* * * And among the essays and statements that have come to hand, as prompt responses to the Secretary's recent call, none have tended so greatly to deepen our convictions of the vital importance which the above questions assume, as those that bear upon the bad reputation for fruit and timber growing which our State sustains among the would-be emigrants from the Eastern portions of our Union. In these essays, the causes for our hitherto fruitless failures will be found most correctly portrayed; while the true road to success is pointed out with so great distinctness that "he who runneth can read it." No necessity now exists for more experimenting losses, or any further waste of precious time. Orchards and grounds for all the hardier fruits can now be planted with an encouraging certainty of good returns.

"In the most northwestern county of our State, and still farther to the northward in Wisconsin, we have recently seen orchards composed of the hardy sorts of home-grown trees, that were fully equal in healthful appearance and productiveness to those growing in those Eastern States always highly reputed for their fruit-producing capacities. Indeed, the farther north that success is attained, the richer, longer keeping, and more choice are the fruits, and the attending triumphs are proportionately complete and cheering."

OUR FRUIT BOOKS.—The remarks of A. Thorn, in our last number, set us to thinking about our fruit books, and to studying up a little as to the sources from which their authors derived information. In apples, peaches, plums, cherries, and the small fruits, we imagine they have most of the matter, as it were, in their own hands; that is, most of the varieties are grown in this country, and a large number of them originated here. The compiler, therefore, if well posted as to men and their advantages for knowledge and comparison, as well as to the fruits, can readily decide as to the probable, if not actual, distinctness of the variety as well as its value. In pears, however, the matter is entirely different. Most of our varieties—and among them many superior ones—come to us from abroad. They are sent here to a dozen or more amateurs and nurserymen by different amateurs and nurserymen abroad; and the experience here is quite contradictory, some having a pyriform-shaped pear, others a roundish obovate one, but both received under the same name. Even our foreign friends conflict in their delineations of varieties; and thus, without designing to mislead, we are often, while taking one man's views and descriptions, led wide of the truth. When we understand that few if any foreign authors have any but office acquaintance with the fruits; that personally they never graft or bud a tree, or cut a graft to be sent away, but make their descriptions, propagate and send out their varieties as received by them from the foreman of their establishment, we can readily see how difficult and how uncertain of being correct is any pomological work on pears. And this arises from the fact, that abroad there is no head; it is every author for himself; and here we have no garden where a tree of each variety is grown and tribed. Practically, it may be said, the whole list of varieties is of little use; there are but a few valuable sorts; but we must remember that without this gathering and experimenting with nu-

merous sorts, by men whose time has been given to the subject without thought of pecuniary gain, we should never have had our list of choice varieties. The *Beurre d'Anjou*—long in the records of Loudon as *Ne Plus Meuris*, without a *Wilder*—would never have been known and everywhere esteemed as now by our people. Let us therefore take our fruit books and our fruit men for the good they give us, and commend them; therefore, at the same time, let us one and all see what may be done toward the establishment of one grand garden in this country, wherein every sort should be grown a tree by itself, carefully classed, recorded, and examined from month to month; and one or more propagated from it each year, so that in case of injury its place could be supplied, and hence the variety never lost. Such a garden would soon reduce our fruit books of their inconsistencies; and also, by reason of a condemned list of sorts—which could be made from records gathered of the success of varieties in various sections, and from the comparisons in the garden—shortly bring them to a limit of pages afforded at a price within the reach of all, and at a profit to the publisher.

KRAMER SEEDLING STRAWBERRY.—Among the many new strawberries introduced the past season, the one above named received considerable favor in the place of its origin. What it will prove elsewhere we have yet to learn; but as the originator has, through W. W. Beebe, secretary Iowa State Horticultural Society, sent us its history, we give it our readers. "It was grown from seed of Wilson's Albany, and selected out of seventy-two seedlings, because of its hardihood of plant, productiveness of quantity, large size, and good quality of fruit. The fruit is large, very firm, deep rich crimson, flesh red to center, very sweet and rich flavor. It has the reputation of holding its fruit after ripe without loss of character for many days."

MR. EDITOR: I am pleased to see advertised "the Cedar Hill Tomato." Some nine or ten years ago Mr. John Sill, of Cedar Hill, N. Y., sent me a dozen plants in pots, which I cultivated, and found to be not only early, but superior in every other respect to any I had yet seen. So much was I pleased with them, that I offered them to my friends on all occasions; but they had "no name," and on several occasions my efforts to give the seed away were answered with, "I prefer to get the new varieties." Of course I have cultivated the new ones too, being anxious to get some one that would "ripen three weeks earlier." You shall see how near I have come to it. Late in February last I planted my seed in the house; in proper time potted them in thumb-pots; later, transferred them to larger pots; again, about the 1st of April, transplanted into the ground in my cold grapery; and again, on the 18th of May, set in the open ground, Keyes' Early, Tilden, and Cedar Hill, all in the same bed, where they had equal care. On the 16th of July we picked our first fruit, each kind having some ripe. The Cedar Hill far excels the others in quality, is more solid at the center, smooth surface, and very productive, ripens uniformly, and when ripe (I never pick them for family use until they are all red) are quite delicious.

I am indebted to Mr. Sill for another luxury, which I may as well acknowledge in this way with your leave. With the tomato plants came a paper of melon seeds, which he said originated on his place, coming up among his Nutmeg melons. These I planted; the product was a small whitish melon, with light green flesh of exquisite flavor. Saving all the seed, I wrote to the editor of the *Rural New Yorker*, proposing to give him the seed to distribute among his subscribers; he published my letter and address. Soon there came over three hundred letters from all parts of the country, requesting seeds. In return I received many valuable seeds, though the most were melon seeds, which I did not want; but

among them all, none were equal to the "John Sill melon." I send you the seeds saved last year, for your subscribers (pray ask them not to write to me for them), and also some very fine Nutmeg melon seed.

At the meeting of the National Pomological Society in Rochester, 1864, a gentleman presented a melon, the product of seed sent from Japan by Mr. Hogg, which was almost identical with "the John Sill."

W. A. WOODWARD.

A LITTLE FUNNY.—Under this head we wrote a short paragraph in our February number, to which exception has been taken by the essayist there referred to. He considers that our quotation was unfair because of the words. We wrote, "according to Dr. Warder," and he says we should have added, "and others," which we now do. As no other names have yet been used, we continue by saying the essayist considers our remarks as making him the cause, although innocent, of a slur upon Dr. Warder. Now, we beg most respectfully to say, that we had no desire or thought of casting a slur upon Dr. Warder; and although having no personal acquaintance, yet we with the essayist "consider him a gentleman of ability, attainments, and genial friendship," and we count the essayist as one of our most valuable and capable horticulturists; but when we read the essay, the few head-lines seemed so much like giving credit to one man by name over others of equal capacity, who had introduced the principles before that man was created, that on the spur of thought we wrote our paragraph.

A VARIETY OF BREEDS.—A writer in the *Cultivator* states that it is a good policy to have several kinds of poultry. The Cochins, Brahmas, and Shanghais make good incubators, while for layers the Polands, Golden and Silver Hamburgs, Leghorns, and Andalusian varieties may be relied upon.

POMOLOGICAL FORMULA.—The Pennsylvania Fruit-Growers' Society have recently issued, through their Committee on Nomenclature, a "Pomological formula of description," for the classification, description, and identifying of varieties of fruits. It makes five divisions: 1st, the origin and history; 2d, form and habit of tree or plant; 3d, external characteristics of fruit; 4th, internal characteristics of fruit; 5th, miscellaneous characteristics of fruit. These are again subdivided into classes and sections, the whole covering really nothing new to pomologists, but falling short of what is required to obtain correctness from an inexperienced describer in not delineating forms and colors, and the applications of terms—two items which we have found pomologists to differ upon perhaps more than aught else in description.

Accompanying the formula is a card from the chairman, announcing the intention of the committee to prepare "a reliable history of all seedling fruits of merit that have originated in our (Pa.) State."

Among pomologists it has long been conceded that the form and habit of tree, color of young wood and foliage, are more demonstrative and conclusive of identity or variety than the fruit; but the subject has become so immense, the number of varieties so great, that a work prepared, giving these points in detail, so as to be available for daily use, would be so massive as to entirely ruin any publisher who should attempt its publication. No system of classification which has ever yet been attempted has resulted in any gain to practical use. It is well to have—and there should always be—order and system in describing, and, if possible, a rule for forms, colors, consistency, size, etc., but the more plainly and simply it is written out, the greater, to our view, is the scientific and practical value. A system of classification into orders, sections, etc., which does not enable its author by it to identify any variety on examination, can have little value except to mystify and confuse. We

shall look anxiously for the first report of the above committee, and suggest that one of their first labors be to tell us all about the Vandervere Apple.

THE GRAPE IN SOUTHERN ILLINOIS.—From a report to the Warsaw Horticultural Society we gather a few items of record: first, that Concord, Clinton, Delaware, Hartford, and Norton's Virginia all did finely; that the Catawba, "the best grape for all purposes," rotted; that this rotting was greatest upon close planting, and less on those of greater distance; that two thirds of the rotten fruit was within two feet of the ground, one third within four feet, while that of five to six feet elevation was entirely free.

FRUIT-GROWING IN IOWA.—From a letter to one of our correspondents from Jno. Edgerton, of Coal Creek, Iowa, a man deeply interested in fruit-growing, we learn that the interest in tree planting is quite enthusiastic. He says: "One of my neighbors has bought trees and will plant 10,000 in spring; he has 170 acres, and as soon as possible will plant it all in orchards. Many others will plant 1,000 trees each, and as apples readily sell for one dollar to one fifty per bushel, their ideas are correspondingly elevated." Of cherries he says: "Many regard the English Morello as superior to Early May or Richmond; both are grown on Morello and Mahaleb—the latter being preferred because it does not sprout." The Mahaleb should be planted deep, so as to have all of the stock beneath the surface.

A THORNLESS BLACKBERRY.—U. E. Dodge writes us that he has a blackberry as "free from thorns as a cornstalk; the fruit large, oblong oval, large seed cells, like New Rochelle, and much sweeter; canes, hardy, very dark color, strong, erect grower, and prolific." This is a good "setting out," and we shall wait impatiently for a sight and taste of this new berry.

NEIGHBORHOOD IMPROVEMENT.—This month is the great month of the year for transplanting tree, shrub, and plants toward beautifying and improving our homes and their surroundings. By planting fruit-trees we add to the prospective pecuniary value of our homes and farms, and also to the material wants of our families; but by planting shade trees and flowering shrubs we add a feature of beauty to gladden the eye and make the heart rejoice constantly. But it is not our own homes that we should try to improve; we should remember that the planting of a few trees here and there on some barren place by the roadside, a group to cover some unsightly building, or a line of trees whose shade in summer would cause the traveler an hour's comfort, are duties that we should regard as pleasures; and if we have in our grounds a few trees that we can well spare, or some shrubs which we wish to reduce in size by dividing, let us take them either to our neighbors who have not, or plant them ourselves on the roadside. If we have a neighbor who looks upon shrubs and flowers as "too much bother," and "an expense he can not afford," but yet "is willing the women should have a few roses, etc., if they want," let us send him a few flowering shrubs, or in the proper time take his wife a few verbenas or scarlet geraniums, and help plant them. It will be but a year or two before this man will be one of the most zealous among us, and the improvement of his place, the higher tone which the flowers around his home give to his children, will return us the little mite, cast upon the wave of kindness, more than forty-fold.

Few of the readers of the *HORTICULTURIST* but could readily do something, and many we know would improve their own places by dividing their shrubs and perennials or reducing the number of shade trees which, in their zeal at first planting, have grown so large as to crowd and destroy the extent and character of their grounds. No true horticulturist should

ever permit himself to ride or walk daily past an unsightly place or building without an attempt to change it by offering to plant a few trees. There is one other motive, also, in this giving or aiding a neighborhood. A tree or shrub is a thing of life; as a gift, it is received with feelings of respect; its daily sight is a bond of goodness; its blooms and opening leaves yearly, if not monthly, remind the possessor of the giver. Do not, therefore, hesitate to give.

GRAFTING THE PEACH.—This is a practice of general and successful adoption at the South. Stocks that were too small to bud at the proper time last fall are grafted in the spring. We have practiced it many times, and successfully, here at the North. We cut our grafts early in spring, before the buds start, just as we would for other grafting; and as soon as the frost is well out of the ground, and the peach buds swell rapidly, we draw away the soil from the crown of the young stock or plant, cut it off just at the junction of root and stalk, and apply our graft of two buds in the common way of splice or tongue grafting, wrapping with bass matting or woolen yarn, and then drawing the soil up around the graft, so that only the point of the upper bud is above ground. We have rarely failed of success by this practice.

NEW GRAPES.—Among the newer grapes for public favor, we notice two from New Jersey—the Conqueror and Challenge, introduced by W. F. Basset. They are described as hardy, produced from a cross between Concord and Royal Muscadine; both black in color; ripening with and before the Concord, and superior to it. Another new one is named Duquett, or Duquett's Seedling, from Orleans County, N. Y. It is described as white, transparent, with only one seed in each grape, nearly as large as Isabella, with flavor of White Chasselas; vine, perfectly hardy, and ripens 1st of September in its native county.

FROM THE SOUTH.—Our correspondence from horticulturists of the Southern States is of a cheering nature, for although they have suffered by the late war, yet we find the love of fruits and their culture brings man to man, and admits of no difference to intercept genial good feeling. We have many choice horticultural spirits at the South, and among them perhaps none of more repute than M. W. Phillips, of Chat-
 awa, Miss., and P. J. Berckmans, of Augusta, Ga. The former is a man of years; we don't like to tell his age, fearing he may be sensitive, but we will say he has devoted thirty or more years, with means at command, to the advancement of fruit-growing at the South; and although now somewhat advanced and impaired, as to pecuniary means, he is devoting his energies and advice to the extension of fruit-growing at the South as one of the profitable and blessed occupations of man. Although in years, and unaccustomed to work, he is giving a daily example of the dignity of physical labor when connected with the brain. He looks forward with hope and expectancy to see the day when the South will export corn and other material products of life's support to the North. He began his labors in pomology in 1832, and has continued steadfast to his love to the present time. He has fruited 250 varieties of the pear, 150 of the apple, 175 of the peach, and others in proportion, besides cultivating extensively ornamental flowering plants.

The latter gentleman, P. J. Berckmans, is younger in years, with great enthusiasm, a successful tree grower, and to whose opinions relative to value of Southern fruits we ever pay respect.

DELAWARE BOTTOM APPLE.—One of our correspondents from Vernon County, Missouri, writes us that an apple under this name was a valuable variety, and a favorite with old and young when he was a resident—a little west of Baltimore, Md. Our correspondent describes this apple as,

"Flat, with a red cheek; good for any use; cooks in a trice; especially fine for table and for apple-butter making; neither sweet or acid, only delicious, and ripens late in August. A small, umbrella-topped tree, throwing its branches out horizontally." Our correspondent suggests that perhaps David Prough, near Freedom, Carroll County, Md., who is now the owner of the property on which this fruit is growing, may give us some insight of its history. Our correspondent seems to regard this as one of the good things not to be lost without a struggle, and we therefore hope some of our readers in Maryland will give it attention. Perhaps N. H. Gore, of Freedom, Carroll County, will write us something of it.

RESTRICTIONS ON PLANTS AND SEEDS.—William Heaver, Esq., writes: "At a meeting of the Tennessee State Horticultural Society, it was resolved to memorialize Congress, and petition them to remove the restrictions on the importations of foreign trees, shrubs, plants, etc., by abolishing the duties on such articles." Other societies are invited to join in co-operation of this object.

"BUDDING THE SWEET CHERRY ON MORELLO STOCKS."—"McKinney, Warren Co., O." The sweet cherries, such as Purple Guigne, etc., do perfectly well on the Morello stocks. It is perhaps best to bud or graft them near to the ground; but if worked up three or more feet high, we have known them to continue healthy and productive over twenty years. The result and value of Morello as a stock is to bring the tree into early bearing and to produce a dwarf habit, the sap being mostly expended in forming fruit buds instead of wood growth.

STEELE'S JANET OR HUNTER APPLE.—Dr. N. M. Harding, of Vernon County, Mo., writes us that an apple under this name is there common, and a favorite; is flat, firm, a great keeper, and valuable to shippers. We respectfully ask of him more information of it.

SCRAPS FROM MY NOTE-BOOK.—“Looking over my last year’s note-book, I see a few little items noted that perhaps may be of interest to the readers of the HORTICULTURIST, and therefore I send them along without dressing. If not wanted, you can let them find their way to the waste-basket, and all right. E.”

[Thank you; we conclude to print and send them to our readers instead of the waste-basket. Can’t you send more of the same sort? We should like them.—ED.]

Grape Buds.—“Some grapevines, covered with an inch or two of soil as winter protection, when uncovered were found decayed; they had evidently swelled by the warmth of the soil, and so were easily affected. *Mem.*: After this I shall see to uncovering my vines as soon as possible in the spring; and then let them lie on the ground, not in it.”

Farther on in my book I find, as connected with grapes: “Some vines pruned in March bled badly, and many of the last buds failed.” *Query*: Was it the bleeding, the loss of the crude sap, or the effect of atmosphere acting through the sap-vessels?

Currants.—“Looking over my sorts, I note down Red Dutch as best of all—best for table, for jelly, and if to sell to customers that know anything, best for market. If to sell to know-nothings, then the Cherry or Versallaise is the thing; it is large, sour, and juicy.”

Blackberries.—“Have been studying the blackberry hobby some; visited A., B., C., etc., and then looked at my own. All things considered, guess the Kittatiny is best of the lot, and shall plant more of it.”

Italian Dwarf Peach.—“Been reading about this, and bethought me of one described by William Prince in 1828, as Dwarf Orleans; looked it up, and am inclined to think this Italian has no business with the name.”

Whitewashing Walls.—“Riding along, saw a man whitewashing his board fence on the south side, against which he was

training his grapes. Asked him why he did so. Said ‘They all whitewashed their walls for growing fruit in Hengland.’”

Query: Which attracts the greatest heat, black or white?

Hot-Bed.—“Started some seed in a hot-bed, others in cold frame; had no second hot-bed for replanting, and the plants got spindling, and when it was warm enough to transplant in open air, they did not ‘go ahead’ to please me; but those grown in the cold frame went right along, and seemed to rather enjoy getting out of confinement.”

MADISON, Wis., Feb. 12, 1868.

MR. EDITOR: I have just learned from a gentleman, who heard it from a horticulturist somewhere, that the Black Naples variety of currants should be pruned annually in order to produce good fruit. I want to know when and how to prune. Is it by cutting out or off? When I first obtained and set out the bushes, I was told black currants wanted to be *let alone*, but this gentleman says the crop can be more than doubled by proper pruning.

G. P. DELAPLAINE.

[The Black Naples Currant requires just the same treatment as other varieties of black currants—little pruning, except to keep the bushes open and up from the ground. Unlike the white or red currants, its fruit is borne mostly on spurs and two-year-old wood, instead of on that of last year’s growth. The best time to prune is immediately after the ripening of the crop, but it may be done any time when the knife is sharp and the temperature above freezing-point. Mid-winter, however, would be a bad time, as the ends of all the cuts would dry and crack, and induce disease and decay. Strong, rather heavy, but rich loamy soil suits the black currant best. On such soils it is one of the most profitable of crops. If not readily sold in market, the fruit can be made into a jelly that will always sell at a high price. The Black Grape and Black Naples are the two best varieties.]

NEW FRUITS IN UTAH.—James E. Johnson, of St. George, Utah, writes us that the progress of fruit-growing in that Territory is wonderful, and while old varieties succeed well, they have some new ones of surpassing merit. Among these he names Gates' Apricot, which, he says, is a new seedling, much noted and widely disseminated, size of the "peach," juicy, of rich flavor.

He also writes of a new seedling grape, "raised from seeds of the Malaga, by Mr. Jarvis, of St. George, Utah, three years since. Vine, a great grower, stout canes, short jointed; leaves, intensely lobed; clusters, broad-shouldered; berries, large, slightly oval, greenish amber; seeds, small; skin, thin; pulp, tender, sweet, and delicious; vine, hardy."

LAYERS OF THE GRAPEVINE.—B. F. J. asks us to say when and how to layer grapevines, to which we reply:

Layers of the vine are made by taking early in spring a cane of the last year's growth and bending it down; lay it along on the surface of the earth. After the buds have grown four to six inches long, rub off every other bud, and then dig a trench about four inches deep; lay the cane along in it, and draw on about two inches of soil. In two to three weeks thereafter, again go over the ground, and draw soil on to render the surface level; then place a small stake by the side of each growing bud or vine, and tie to it. In the fall, these should be cut apart in the soil, *i. e.*, separate the original cane half-way between the buds by cutting with a sharp spade or knife, then take them up carefully, and heel them in in some location where the water will drain quickly and readily from the surface.

Layers of the growth of this year are often made and sold, but we can not consider them as perfect plants. Such layers, if left to grow the second summer, may become mature and perfect; but if removed in spring and transplanted, ninety-five out

of every hundred, while they may live during the summer, will die the coming winter. We have watched this carefully, and our advice is, never to transplant a layer from green wood until it has had its second season in its natural bed. The layers of green wood should not be separated from the parent plant until August of the second season.

A NEW PLUM OF DWARF HABIT.—We have several letters respecting a new native plum of quite a dwarf habit in growth of tree, found in Vernon Co., Mo. If the half that is said of it be true, it will soon find its way into favor of amateurs and commercial plum growers. It is said to be large, rich yellow, flesh melting and delicious, ripening in August. We shall look to our friends West this coming season for some more definite account of it.

RASPBERRIES AT THE WEST.—The cultivation of raspberries everywhere within the reach of daily transportation to large cities has become one of the items of rural commerce, and it is important to gain all the knowledge we can as to the comparative value of varieties. Recently looking over a number of letters from our far West correspondents, we were struck with the universal expression relative to the hardihood and productiveness of their native varieties; and with this in our mind, remembering that the best blackberries we have are merely chance gathered superior wildlings, not attributable to the skill of man for their production, we feel anxious and desirous that energetic attention and thought be given to examination of our native wild raspberries in our new Western States and Territories. We hope our Western fruit-growers will look at this matter carefully in its season, and note down such plants as appear worthy. We shall be pleased to receive plants, one or more of such as promise well, and will give them a fair trial, and report in due time.

SMALL FRUITS AN AID IN SUPPORT OF ONE'S FAMILY.—One of our correspondents writes us that his first trial in the fruit line, to relieve from the expense of bread and meat, was growing strawberries. He says he commenced with twenty feet square, and increased in two years to nearly one eighth of an acre, set six kinds mixed together, and that patch of ground furnished all the berries the family and children could use, besides realizing from sales a surplus of over seventy dollars a year. Another of his reliances was the sour cherry, and he practices heading his trees in each year, taking out small crossing limbs, and obtains fruit in great abundance, and he says of larger and superior size to that of his neighbors who practice the let-alone method.

DISCOVERED REMEDY FOR ROT IN THE GRAPE.—Wm. Sumner, one of our occasional correspondents from South Carolina, writes of a remedy for rot in the grape, as follows :

"I have in my possession a most important discovery which I propose to furnish applicants for a reasonable sum. It is a remedy for the rot in grapes, accidentally discovered, and tested with success upon the Catawba, Isabella, Herbemont, Madeira, etc., all of which rot badly in this climate. The Isabella has rotted so badly for years, that in many sections it has been cut down as a cumberer of the ground; while the Catawba, so valuable as a wine grape, has almost been abandoned, and one or two inferior grapes (the Clinton, etc.), that are comparatively free from rot, have been taken up and are now being cultivated as the wine grapes of the United States. This remedy will restore the Catawba to its place as the grape richest in glucose, and better adapted for making good wine without the addition of sugar than any other grape. The remedy is cheap, within the means of all who cultivate the grape, and can be applied, if need be, with any of the other fertilizers with-

out injury to their properties. If we all had not been left so poor from the war, the remedy would have been given cheerfully to the public; as it is, it may restore us to a competency."

We confess we ourselves have little faith in any of these so-called remedies, but it is worth while before denying a point to prove one's denial, and therefore we hope to see this tested.

SEEDLING CHERRIES.—William Heaver, Esq., a long time an active member of the Cincinnati Horticultural Society, but recently moved to Nashville, Tenn., sends us a report of a fruit committee of the Cincinnati Horticultural Society, in which some seedling cherries are noticed as raised by Charles M. Buchanan, Clifton, Ohio. These were shown under numbers, and are of the heart varieties. Mr. Heaver writes that his "Nos. 1 and 4 are superior in quality; and if they sustain the character they seem to possess, under other circumstances of soil, situation, and culture, they will certainly be a desirable acquisition."

ALTON (ILL.) HORTICULTURAL SOCIETY.—We are indebted to James E. Starr, the live secretary of this live Society for copies of its transactions, from time to time. Judging from the reports, the Society is doing a world of good. Its members are active in their love of the subject, and well disposed to dispense their knowledge, believing that the more people know and think, the better they are, and the more progress toward the perfection of all things. In the report before us, as we write, of the January, 1868, meeting, we notice one recommendation of the Secretary, which we especially commend as worthy adoption by all societies. It is as follows: "I recommend that efforts be made by correspondence, to obtain complete sets of the publications of other societies; and to establish a library and reading-room in the city, which shall also be used as a fruit-growers' exchange in the fruit season."

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LANDSCAPE OR HOME ADORNMENT.

BY F. R. ELLIOTT.

THE readers of the HORTICULTURIST will remember that in the February number a few remarks were made relative to home adornment, and a promise also made to depict further some features of beauty found in the grounds of Joseph Perkins, Esq., Cleveland, O., which are worthy of study and thought by every owner of a home-
stead, inasmuch as they are good examples of true taste applied by principle to art in connection with nature. Of the fine arts in general, and of landscape gardening in particular, there are many amateurs whose minds are open to conviction and inclined to truth, but whose powers of observation are not sufficient to enable them to discover what is right and appropriate until it is pointed out to them. The art of composition embraced in landscape gardening has certain principles which go toward forming a unity of the whole, and from which no deviation can be made without marring the result. Taste may be possessed in a greater or less degree; but without reference to principles, it will fail to create a design of harmonious proportion or association. It is to be regretted that so little attention is given to the subject of princi-

ple and arrangement of tree, shrub, flower, and path, as a whole, in the decoration of our homes. Thousands on thousands of dollars are yearly expended in creation of new places, to be again remodeled the succeeding year because of the apparent want, when completed, of congruity and harmony necessary to an effective whole. It is not expected that every man will, or can, be a landscapist any more than he can be a physician or lawyer; but he should have sufficient love for his own home to induce him to study the principles of the art, so as to be able to appreciate the reasons for arrangement of designs submitted by his gardener or landscape artist. A spirit of independence, a pride and love for the creation of one's own, should imbue every citizen to the designing or planning for his own home surroundings; but ere he puts his plans into execution, he should submit them to some professional artist for criticism, and be prepared to receive and understand any and all reasons for changes. Were this the condition of things, the rapidity and beauty of creation of new home surroundings would be greatly enhanced; and many a gentleman's grounds that now receive al-

most an annual remodeling, would exhibit most gratifying results within a period of five to six years from first planting. It may be pleasant to pass through an apprenticeship of learning by practice the character of tree and plant, the requisite breadth of lawn or road to give the best effect, or to arrange them in one harmonious whole; but it consumes years of time, and is a knowledge which may be bought and made applicable whenever the purchaser has fitted his mind by reading and study to appreciate it. I make these prefatory remarks because at this time probably many readers

of the *HORTICULTURIST* are about to plant trees, form beds for flowers, etc., and possibly may be induced thereby to think the subject over carefully before ordering the position of a tree or flower bed; and because by creating in their minds thoughts of the art, they will the better appreciate the illustrations exhibiting the work of others.

"One of the most common errors in ornamental gardening is that of mixing herbaceous flowers with shrubs and trees," by which neither can thrive properly; or if they do, the effect of the one is injured by that

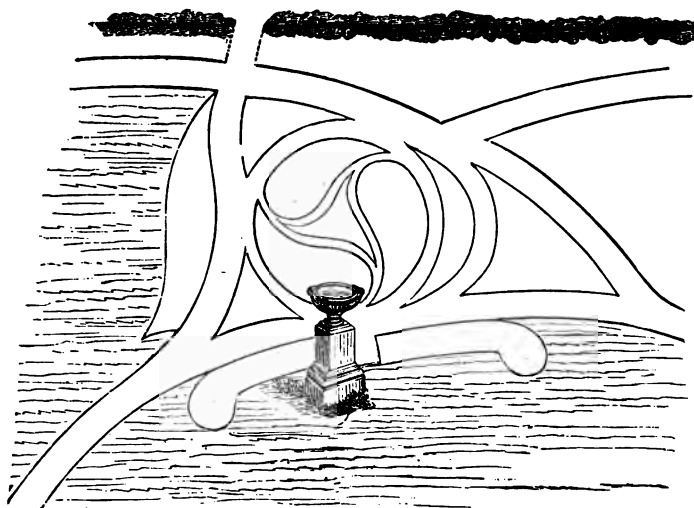


FIG. 46.

of the other. However pleasing and picturesque it may be to see trees, shrubs, and flowers all striving together for the mastery in a natural wood, yet this sort of beauty is totally unsuited to scenes of art; and however much the owner may desire to see and study every tree, shrub, and flower, it is better to plant the surplus in a reserve border in some part of the rear garden, than to destroy unity and effect by a crowding of varieties incongruously together.

Another error common to small gardens

is the want of some leading feature of special interest, such as the creating of a flower garden proper, a fountain, or rockery; the last one of the most difficult construction, but especially valuable, for the reason that it never satiates.

The flower-garden proper is the most readily constructed, and within the power of all. It should be always near the house, and if possible so that more or less of the views from the windows of the house will look down upon it. Various patterns for the arrangement of the beds and paths

are found in all works on landscape gardening ; but in copying them, thought should be taken as to their adaptation to the position or form of boundary in which they are to be placed. For a plot with parallel boundary lines, the accompanying design, fig. 46, copied from the grounds of Joseph Perkins, is one of the simplest and yet effective which I have ever seen. By examining, it will be observed that the center is a simple circle from which four

beds are formed, and from outside of that the paths and beds are made to accommodate natural lines of travel, which the position of the house, being on the side where stands the vase, and the opening in the opposite hedge, seem to demand. Planting these separate beds with masses, each of a distinct color, produces a constant feature of interest and attraction.

The fountain is the second available item of ready construction within a moderate



FIG. 47.

cost. In the suburbs of our large cities, when water is supplied from public reservoirs, the cost is little more than the introduction and placing of pipes. In the country, tanks have to be constructed ; and here let me say such tanks should never be placed in the house, because they can just as well be in the barn, and in the event of a leakage, the injury therefrom will be less.

While water, in many ways, is one of the

most pleasing and even attractive features of the pleasure-ground, it is at the same time most difficult of association with surrounding features of art. Commonly a basin of stone-work is constructed directly in front of the house, and contiguous thereto, in which some figure, or a succession of urns or basins, is placed, and from which a single little jet of water is forced continuously. Often this falling water, with its

silvery lightness, glittering as with myriads of diamonds in the sun, has for association some stiff and stately tree for its foreground, as seen in our figure, 47, where the owner has planted two Scotch pines within a very few feet of the fountain; while the house, as a background, stands distant some forty feet; the whole bringing out each feature distinct and prominent, but each an item of itself, without any association or harmony with the other. Had this same fountain been placed a little to one side, just where a glimpse of it could be had

from the drawing-room windows, and then had for its association near by in the grounds a weeping birch, a weeping beech, and an American weeping willow, it would have been in itself and associations a feature of beauty winter or summer, and in no way appeared as a foreground to the architecture of the house. I confess a dislike, however, because of their want of harmonious association to all of these marble or cast-iron fountains when placed in the open grounds and in association only with an ordinarily kept garden or grounds.

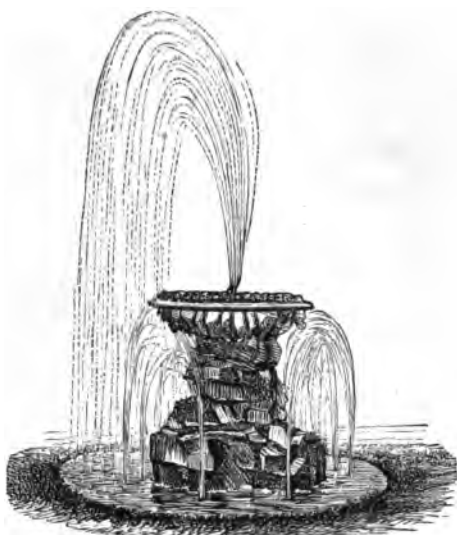


FIG. 48.

In the conservatory, or in the center of an Italian garden, they are in place; but I have yet to see one in the open ground of a small place, kept in the usual manner of gardens in this country, that did not offend the eye when silent, and detract from all else when playing.

As I have said that a fountain may be had at a little cost beyond that of the pipes and their laying, and at the same time be made to harmonize with tree and vine surrounding, I offer the illustration,

fig. 48, which is simply varied pieces of rock laid up around the center pipe, and having a wire-work frame, into the meshes of which are woven various colored stones as the basin or urn. A circular pipe surrounds it, over which is laid a pavement of stone in mosaic work, and from between which numerous smaller jets of water arise. In the plinth of the structure, amid the rocks, ferns and water-plants are planted. The mosaic pavement is level with the surrounding turf, with just sufficient dip

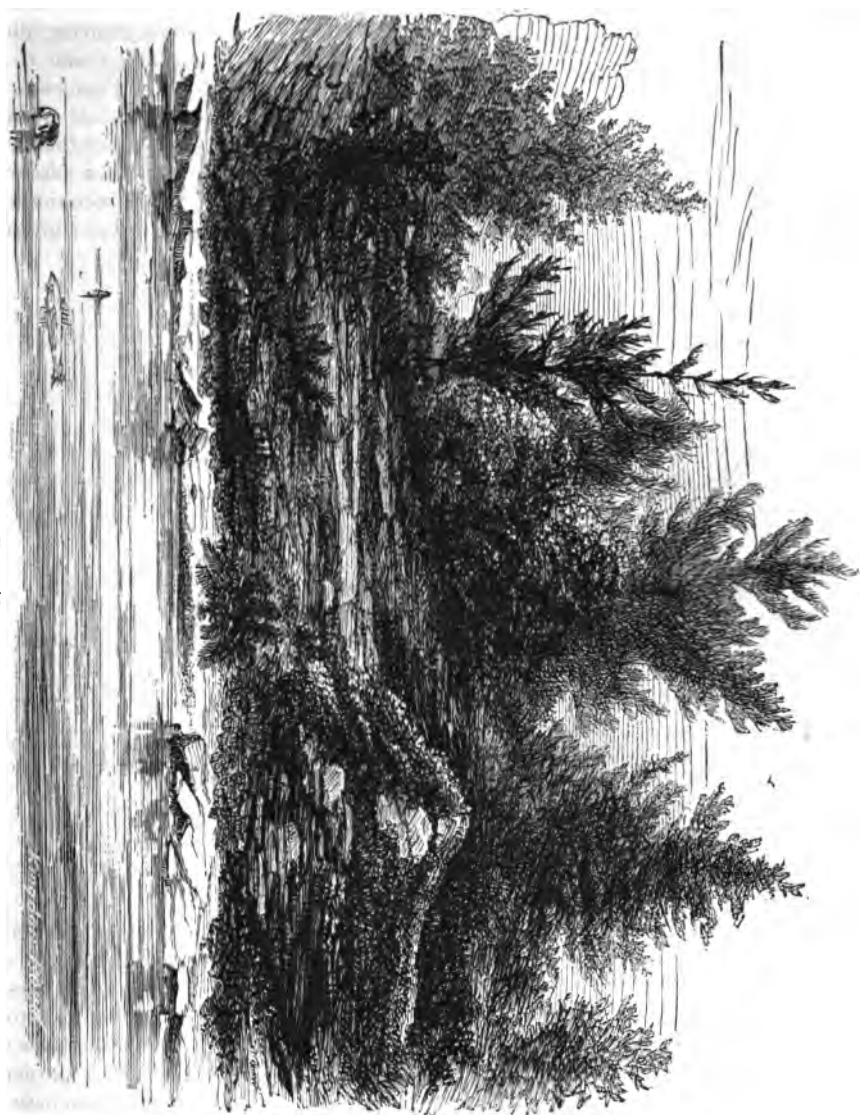


FIG. 40.

toward the center to draw the waste water, which passes off by means of a pipe beneath.

Next we come to the rockery, with which, whenever it can be had in quantity, water is a pleasing and attractive feature. It is not, however, necessary to

the perfection of the work, as a study of our mountains and rocky glens will at once convince any one. Artificial rock-work, unlike the construction of a flower-garden, will not admit of the appearance of art in its formation; the rocks can not be divested of their natural character, and any



FIG. 50.

attempt to give their arrangement aught but such as nature's own laws, in her upheavals of the earth or breaking away of water-courses has exhibited, fails of satisfying results. In an examination of hundreds of piles of artificial rock-work, during my travels, I have never yet seen but

two that in any way deserved the name, or would lead one to suppose they were natural, not artificial creations.

The expense attendant upon procuring material, together with the want of cultivated knowledge in its construction, are features that will always stand in the way

of any number of pieces of rock formation being artificially placed with natural effect in the grounds of our suburban homes; but there is no one expenditure of improvement which is so lastingly satisfactory, so constantly a feature of interest to the owner, and a point to exhibit to his guests, as that of an artificial yet natural rockery. The two pieces of rock-work named above, entirely the creation of art, are—one at Newburgh, N. Y., and the other at Cleveland, O. The first was, I think, the work of a Doctor Ward, and is situated in the side hill at the entrance gateway of property immediately in the rear of the once residence of the lamented A. J. Downing. The second is within the grounds of Joseph Perkins, Esq., Cleveland, and entirely a creation from his own guidance and direction. It is situated a little one side of the center of his fruit-garden proper, and is built upon the basis of a little pool of water that in the hands of most men would have been drawn off by means of an open ditch or underdrain. Not so with this gentleman. After studying the amount of his spring of water for a year or two, until he fully comprehended its capacity, he proceeded to excavate a small pond, which, when filled, is conducted away by an apparent natural shallow brook-let, winding its way several rods and dropping again into another pool or pond of irregular form and somewhat less size than the first. The margin of these ponds and runway is broken with irregular ledges of rock, presenting the appearance as of some upheaval of nature, leaving in its center a deep pool of water, with more or less of broken fragments strewn on its margin or jutting from below. In the fissures of

the rock, mosses and vines are luxuriating; while in the places more abundant in soil, shrubs and trees, both deciduous and evergreen, have sprung into existence, overhanging and outcropping the cliffs. Fig. 49 is a view of one line of cliff, taken from the lower side of the pond, and presents the northern face with the water in the foreground. Standing here upon the margin of the water, no view is obtained from outside by which the association of nature's own work can be destroyed with items of art or garden life, and the visitor gathers no impress of anything but mother nature's own work. Surrounding this exquisite piece of art, outrivaling nature, the planting has been so admirably blended and conducted, intermingling fruit-tree and shrub—the flowering and the fruit-bearing—that it is difficult to distinguish any line of demarkation between the fruit-garden and the wildness of nature which greets you as soon as you pass through a rustic summer-house overhung with vines, which is the principal entrance to the pond. Fig. 50 is a view of this entrance, taken from the opposite side of the pond, and showing a glance into the summer-house, with one of the seats, and the broken path of rocks, between two ledges, leading to the water. The pebbly brook, the rustic bridge over it; the little bays, recessed, in which are growing wild flowers, ferns, and mosses; the glitter of the gold fish in the clear water of the pond, are among the additional items of interest and beauty connected with this gem of art in copying or outdoing nature, which, were it public property, would well repay a trip from one end of the States to the other to view it.

PLANT MURDER.—Many an amateur and gardener commits plant murder unwittingly by keeping up a heat in the green-house or propagating-pit during the night season. All kinds of plants will bear a low night temperature with impunity, evidence of

which is given from the records of the low night temperature in the torrid regions. Heat without light creates a morbid and unhealthy growth, and loads the plants with disease, sooner or later to be developed by yellow foliage, damping off, etc.

APPLES FOR EXTREME NORTHERN SECTIONS.

THE MARENGO WINTER CRAB.

By reason of numerous letters the past year my attention has been drawn to the consideration of varieties of fruits adapted to our extreme Northern civilized limits of population. Very few varieties of apples are found to be of sufficient hardihood to endure the great extreme of cold which the climate occasionally exhibits. Seasons when the thermometer falls to 36° or 40° below zero are found to destroy the life of nearly all of our cultivated varieties of the apple. The Duchess of Oldenburg and Tetofsky, so far as I can learn, prove the most hardy of any of our foreign varieties, while the Gilpin and Jonathan are among the next hardiest. Of the newer Russian varieties now being tested by Downing, Barry, and others, we of course as yet know nothing, but hope much, from the fact that many of them originated in very high northern latitudes, and may be presumed to possess more than the usual amount of vitality and endurance. The different sorts of crabs, such as Hyslops, Transcendant, etc., etc., I believe all prove hardy in even the most northern cultivated limit; but the fruit, besides being only eatable where nothing else can be had, has also the failing of decaying early in autumn, and thus leaving the grower without apples of any sort for winter. It is a desideratum, therefore, with those whose lot is cast amid the cold and inhospitable regions of the North, to procure even a second-rate fruit that will keep all the winter and at the same time a perfectly hardy tree. To this end it is desirable to note all the new

native fruits of the Northwest, that from among them we may possibly find the one wanted. I have now before me as I write, March 28th, 1868, specimens of the Marengo Crab, sent by Charles Andrews, of Marengo, Ill., and which he claims is perfectly hardy in the tree. The fruit is small, as my outline shows, but it is now perfectly

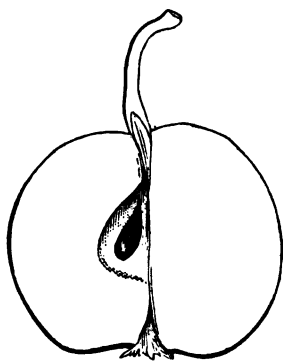


FIG. 51.

sound, of a bright, handsome red color, and the flesh is yellowish, rather dry, but quite rich and quite good, as I have before said—when there is nothing besides it to be had. For those who live in regions where such varieties as the Jonathan, Fameuse, etc., can be grown and kept, this variety, except for cider or vinegar, is not worth ground room; but for the extreme north it may prove equally as valuable to residents there as the Shocklay, which is but little better, does to those of the Southern States.

F. R. E.

PEARS IN IOWA.—In Henry County, Iowa, we learn that large quantities of pears of ordinary quality, probably natural seedlings, are grown, and many of them

made into perry. Standards do well there, while Dwarfs do not receive the care in planting and pruning necessary to success.

HARDY SEEDLING PEACHES.

THE difficulty of growing and fruiting peach-trees in many locations makes every item of information toward overcoming it valuable. In a late number of the *Country Gentleman*, A. Babcock gives an account of a seedling peach orchard as follows:

"Near Wales Center, Erie Co., N. Y., 50 miles south of Lake Ontario, and 25 miles east of Lake Erie, on a ridge of tolerably good land, is a peach orchard of 200 seedling trees, 24 years old, now in good bearing condition. This orchard had its origin from seed brought from the vicinity of Sturgeon Lake, in Canada, about 116 miles north of Lake Ontario. These trees are a freestone, red rareripe variety, with a red cheek, and most of them sweet and well flavored, though they vary some in color, flavor, size, and time of ripening. They differ from the old red rareripe in several points: they are better flavored, more dwarfish in growth, being *very slow* growers, stone *very small*, blossom *large*, good bearers—generally bear heavy crops every other year. They bore large crops in 1858, 1860, 1862, 1865, and 1867. The intermediate crops between those years did not amount to much. If the fruit had been *thinned out* about half while small, probably these trees would have borne crops annually. These trees have never lost a crop by spring frost, though in the spring of 1865 the mercury sank to 28° while they were in full bloom.

"As near as I can learn, they have not received any extra care in culture or skillful treatment in pruning. They branch out about two feet high, their trunks now averaging about four inches through—their most notable peculiarities being slow growers, of dwarfish habit, having large

blossoms and small stones. The owner of this orchard has three or four generations of this Canada seedling now in bearing, and several farmers in that locality have fine young bearing orchards, and all seem to have the same characteristics of slow growth, hardiness, etc.

"Our common sorts of budded trees and seedlings seem to have utterly failed there for ten years past, in fruitfulness and longevity, when planted side by side with this Canada seedling, and this test, it is claimed, has been thoroughly made, showing conclusively the superiority of the latter. * * * The theory of the people who have this Canada peach is this: they say it is from the north, where the summers are short, and the roots, tops, buds, and fruit all *ripen early*."

To this he adds, "I believe that peaches can yet be grown all through eastern New York and New England, at a moderate outlay of labor, by adopting a plan something like this: get young seedling trees, or seeds from good flavored natural fruit from the north, say Canada or Grand Traverse Co., Mich. After one season's growth in nursery rows, take them up, and cut back to a stump within three to six inches of the collar; plant them in sheltered places, with woods, hills, ridges, or buildings on the *north* and *west* sides of orchards; keep them headed *very low*, like currant bushes, by cutting back annually or semi-annually, so that the trees will not be more than six feet high when six years old. Avoid tilling late, say after July 15, and mound them up with earth with plow and shovel, to protect the lower part of the branches from cold, and to keep out the borer."

THE BEST EARLY BEET we have ever grown is the Bassano. In good ground it

grows quick, cooks tender, and is just sweet enough to be delicious.

THE PASSIFLORA—(Continued).

BY HORTICOLA.

THE treatment of the Passiflora is very simple. It requires rich but porous soil, which may be prepared by mixing leaf mold, perfectly decayed sods from old pasture grounds, and well-rotted cowdung together, with the addition of some sand. Peat, sweetened by long exposure to atmospheric agencies, may be substituted for leaf-mold. The pots should be comparatively large; sufficient drainage is important. During the growing season the plants need much water, and are benefited by often repeated syringing; in the winter no more water must be given than is absolutely necessary, especially when they are kept in a rather cool temperature, otherwise the roots will suffer. They must be repotted *at least* every spring. A temperature varying between 45° and 60° Fahr. is suitable to all kinds. If the temperature is low, but moist, many kinds suffer from mold at the joints, by which they are injured very much. Some kinds stand our winters when growing in the open air, *f. i.*, *incarnata*. *P. cærulea* is hardy in northern Germany, when covered up a little. In this country I never succeeded, even with the utmost care, to keep it alive in my grounds.

Passion flowers grow very easily from the seed in a hot-bed, or even in a warm room. To open them a little with a pen-knife before planting, as recommended by some, is unnecessary, for they germinate without the least difficulty.

Layering is always successful, but very seldom practiced, as cuttings will grow with certainty. They are taken from young shoots before the wood is too firm and old; if it is too succulent, the cuttings decay instead of forming a callus and making root. In long-jointed kinds two eyes are sufficient; in short-jointed, *f. i.*, *P.*

kermesina, the cuttings are made from two to four inches long. They require very sandy, light soil and bottom heat. Keeping them in a close atmosphere assists the process of rooting very much.

Pieces of the root, provided they are not too thin, grow, if similarly treated, with facility. The best time for making cuttings is the spring; in a propagating-house they strike easily in the winter.

Passion flowers may be grafted according to all the known methods; but as grafting them presents not the least advantage, it is only done occasionally by amateurs. There was a time when I placed some confidence in it for certain purposes, but I soon gave it up.

Very important, however, is hybridization. We owe many very beautiful varieties to it, *f. i.*, *P. cærulea-racemosa* (*P. cærulea* and *racemosa* *G. princeps*), *alata-cærulea* (*alata* and *cærulea*), *Loudoni* (*kermesina* and *princeps*), etc. The anthers as well as the pistil being so prominent in the Passion flower, any child may perform the operation with success. It is advisable to remove the anthers of the flower to be impregnated with the pollen of another kind as soon as the flower opens, and a little later, when the pollen appears to be in the right condition, to cut off the whole flower, or a single anther, to touch with it the pistil of the flower to be operated upon. If the operation has succeeded, the fruit will soon commence swelling, and will protrude from the decaying flower. When the fruit is—according to the kind—of the size of a filbert or of a walnut, the decaying floral leaves, etc., and the remnants of the calyx, must be carefully removed, so that the fruit is freed from everything surrounding it, otherwise it is sure to drop prematurely, its footstalk

and tube decaying along with the soft, succulent floral leaves. This is the *only* means to insure the ripening of the fruit.

I am not aware that this all-important fact is mentioned in any of the books on horticulture; but I remember how often and how sadly I have been disappointed before it occurred to me to resort to the expedient just mentioned.

I have very rarely obtained ripe seed from the common *P. cærulea*, oftener from *P. princeps* and *P. kermesina*, and a few others. But there is a kind so ready to be impregnated by the pollen of almost every other kind, that I wish to call the attention of those interested in the matter to it. It is the *P. cærulea-racemosa*, and a lighter variety of it. Both, it is true, are hybrids themselves, yet they produce hybrids with so much facility and certainty that it is astonishing. I have raised from it a very large number of hybrids, some of which I flowered before I left Germany. One of them was exquisitely beautiful, its color being snowy white and its growth compact. I neglected naming it, and so it may have been lost.

As *P. cærulea-racemosa* itself is one of the finest kinds in every respect, nothing better could be selected for the mother plant. *P. discolor* or *Maximiliana* takes also the pollen of others very readily; but as its flower is rather insignificant, it is for the purpose of hybridization much inferior to *P. cærulea-racemosa*.

Pruning in the fall, and *pinching* during the summer, are essential in the management of the *passiflora*. I never saw any injury arise from very severe pruning. The flowers are produced on young shoots, often protruding directly from very old wood. If not cut back annually very severely the Passion vines will soon become unsightly, bearing their flowers at the end of long, naked stems. If not pinched in during the summer as often as young shoots need it, to prevent them from growing too long and slender, a number of kinds will not flower at all, when grown in

pots; when, on the contrary, frequently pinched, the plants will be effectually checked and compelled to make new shoots, which will soon show flower buds. In this way I proceeded in flowering even *Tacsonia mollissima* and *Pinnatistipula*, two kinds that have rarely been seen in bloom, except when growing directly in a border of a green-house. Those which I flowered grew in the open air.

Severe pruning and pinching are also the only means of dwarfing Passion vines. This was a favorite object I had in view when I devoted so much time to their cultivation. Some kinds are, with a little attention, easily dwarfed, *f. i.*, *alata*, *alata superba*, *quadrangularis* and its varieties. *P. insignis* and *Decaisneana*, also *phœnicea*, *kermesina*, *princeps*, and *Loudoni*, are a little more refractory, but yield to energetic perseverance. *Cærulea*, however, *laurifolia*, *maliformis*, and the like, baffle very often the cultivator's well-planned exertions.

Some of the readers of the *HORTICULTURIST* may remember a charming specimen of *P. quadrangularis* var. *Decaisneana*, not more than seventeen inches high, with fifty-one buds and open flowers on it, which I had shaped in the way indicated. It was, when I lost it, several years old; its woody stem measured an inch in diameter, and was a foot high. The first year I cut it back to about a foot from the soil in the pot, and by pinching the young shoots as soon as they had grown three or four inches, to two or three eyes, the plant formed a head like a willow-tree or the grapevines in some countries. At last, flower buds would protrude from the old wood or from very short branches.

All kinds will bear planting out during the summer. It is not necessary to grow them when so treated on trellises sheltered by walls; they did very well in my garden, however bleak its situation and exposure are. As some are very rampant growers, *f. i.*, *cærulea*, *laurifolia*, etc., it is necessary to provide for the room indispensable

for their full development, and to separate such as are comparatively but moderate growers, *f. i.*, *kermesina*, from others. The soil that suits them best in the open air must be very rich, deep, and porous, without any stagnant water below. Even in the open air, pinching is very advantageous; the two *Tacsonia* mentioned I flowered in the open air; they grew in a border of my garden, and were very severely pinched.

Some say that it is difficult to make Passion vines grow again in pots when taken up in the fall. This is, however, an assertion not based on facts, for they all grow very vigorously under proper treatment. They, of course, lose many roots. Most of them *must* be cut off, as their mass would, in many cases, be too large for any pot. The plants themselves must be pruned back to a suitable size. If, during the summer, branches have been provided growing from near the root, there will not be the least difficulty in keeping the plants within reasonable bounds.

It is always judicious to have a supply of young plants of the kinds planted out to take the place of those which accidentally may have grown too large, although there is not much danger of that if they are carefully and judiciously managed. They are as pliable as grapevines; they yield with equal facility to the hand of the experienced cultivator.

I will conclude this article with a list of the most beautiful kinds which have been in my possession. A strictly alphabetical order would hardly answer my purpose; I will rather group them together, as far as practicable, so that the amateur may have a guide for selection.

Passiflora alata.

- | | | |
|-----|-----|-------------------------|
| Do. | do. | <i>superba</i> . |
| Do. | | <i>phœnicea</i> . |
| Do. | | <i>Gontieri</i> . |
| Do. | | <i>quadrangularis</i> . |
| Do. | do. | <i>insignis</i> . |
| Do. | do. | <i>Decaisneana</i> . |

These are very similar, so that, when not in

flower, they may be confounded by such as are not acquainted with them. They are very beautiful; their flowers are, to a certain degree, of a cup form, and are very large, from four to nearly six inches in diameter (*P. q. Decaisneana*); stems, angular; leaves, without lobes, ovate, serrated, pointed. *P. alata Gontieri* and *quadrangularis* have from four to six glands at the base of the leaves. *P. phœnicea* has but two, of a bright yellow color, by which it can easily be recognized; color of the flowers, dark red and blue. *P. quad. insignis* blooms when very small. *P. quad. Decaisneana* has the largest and most imposing flowers. Mr. Donadi, of Astoria, introduced it to this country a number of years ago.

P. alato-cærulea—a hybrid raised from the seed of *P. alata*, impregnated with pollen of *P. cærulea*. Flowers, very large, but more flat or open than those of the *alata*; leaves, varying in their shape, some being lobed, others not. Not a rampant grower, but a profuse bloomer.

All the kinds just described are very fragrant.

P. alba—white.

P. albida—white.

P. amabilis—very beautiful. It is a hybrid of *P. princeps* (*racemosa*) and *alata*. Fragrant.

P. augustifolia—yellow and blue.

P. coccinea—red.

P. cærulea—too well known to need description. Hardy in northern Germany, when covered and protected from rain.

P. cærulea-racemosa—in two varieties, one of which is lighter in color. They are hybrids of *P. cærulea* and *princeps* (*racemosa*). Both of them are very desirable kinds also for hybridization. Very profuse bloomers during the summer and fall.

P. edulis—white and purplish. It ripened its fruit with me in the open air.

P. Doroscondiana—red. Most beautiful in every respect, and similar in growth and leaf to *P. cærulea-racemosa*.

P. filamentosa—blue, resembling *P. cærulea*; flowers, larger and brighter, but

fetid. With me it sprouted in every spring from the root, the stem dying in the fall.

P. hibiscifolia—white and red; fetid.

P. holosericea—flowers, when growing in a border under glass, so profusely that it excites the admiration of those who see it. Flowers, not large, bright orange and red, they close between two and three o'clock P.M.; foliage, very soft, like velvet.

P. Imperatrice Eugenia—in every respect a magnificent plant. Leaves, very large, three-lobed, and of a very elegant shape; flowers, sometimes more than five inches in diameter, of a purplish color, approaching to pink; a prodigious bloomer.

P. incarnata (May pop)—hardy here, sprouting every year from the root; flowers, white or reddish, fragrant. It never bore fruit with me.

P. kermesina and *P. kermesina major*—one of the most beautiful kinds. No collection, no green-house should be without it. Elegant and graceful in its habit and growth; leaves, three-lobed, of a glossy green, and when young, purplish red, on the under side especially; blooms when very young; flowers, bright purplish red and blue; the shape of the flowers reminds one of an Indian head-dress. *P. kerm. major* is larger, but the color is not so bright and pure as of the common *P. kermesina*.

P. Loudoni—a hybrid of *P. kermesina* and *P. princeps* (racemosa). Flowers, red, but so bright that it is almost impossible to look on them for any length of time in the sunshine. I do not know of any other kind in the whole tribe that I could compare with it in this respect.

P. laurifolia—white and purplish.

P. Loweii—similar in color to *P. quadrangularis*.

P. lyrata—rose.

P. maliformis—white and blue.

P. Middletoniana—very elegant and fragrant; reddish and purple; a free and

profuse bloomer; also the foliage very beautiful.

P. Comte de Kiseleff—received from Mr. Geitner, but I am not sure whether the name was correct. A most profuse bloomer; flowers, larger than those of *cærulea*, of a peculiar grayish purple.

P. picturata—very beautiful; purplish and blue.

P. princeps (racemosa)—leaves, tri-lobed, of a leathery texture, pale green, shining; flowers, red, in long racemes. One of the most beautiful kinds.

P. serratifolia—white and bluish.

P. adiantifolia (Disemma)—a most graceful, elegant plant. The leaves resemble those of our fern called the Maiden-hair; flowers, dull red and brown.

P. Murucuja (*Murucuja scellata*)—pale scarlet; very elegant.

P. pinnatistipula (*Tacsonia*)—red and white.

P. mollissima (*Tacsonia*)—rose, charming.

Tacsonia Buchananii, recently introduced by Mr. Buchanan, is said to surpass all the *Passionæ* in cultivation. I have not had any opportunity yet of seeing it.

Dr. Blumenau, director of the colony bearing his name, in southern Brazil, about 30° S. L., a scientific botanist, wrote to me last fall that he had received some seeds of a *Passiflora* recently discovered in Peru. Its fruit, of a delicious flavor, reaches the enormous weight of 8lbs. Dr. Blumenau promised me a plant, which I shall receive during the ensuing summer. I shall take good care of it, and distribute young plants as fast as I shall be able to grow them among my horticultural friends.

As it is very tedious to read lists of plants, I do not wish to make it more extensive, although it contains hardly more than one third of the kinds I have had under cultivation. In making it, I endeavored to select such kinds as will give the greatest satisfaction to the amateur.

THE PEACH.

It must be honestly confessed that, as scientific horticulturists, the majority of us know very little about the peach.

Stop! I may be too fast in this proposition; well, let it be modified by saying that very little definite information is to be met with in our periodicals respecting the peach.

Since A. J. Downing wrote up the history and practice of peach-growing as an orchard crop, few satisfactory experiments have come within our observation calculated to throw a satisfactory light on the want of success which has, in the majority of cases, attended the extensive culture of this fruit.

Too much alike many other ventures, "peach-raising has had its day."

This idea might be accepted without comment but for the fact that under certain circumstances, and in various sections of the country, at intervals, fair crops of a fair quality are produced. But what is more important, individual trees, in many sections, are found to produce abundant crops of the largest and finest fruit, without, it would seem, any special care or attention. Such trees are produced from chance pits, either deposited as an experiment in private yards or gardens, or spring up spontaneously from the pits cast away by chance. In either case the result is of equal importance in demonstrating that good peaches and an abundant crop may be obtained from such individual trees, leading us to the inquiry, why this result in these exceptional cases?

That there are hundreds of such instances of chance seedlings producing luscious fruit, and an abundance of it, it is presumed no one will question who has been a close observer or frequent attendant at fruit exhibitions.

Nothing connected with our fruit culture is more striking than the rapid decline

of the peach crop in many sections of the Middle States. It can scarcely be credited that, in twenty years, districts of New Jersey have fallen off from thousands of bushels of choice fruit to a few bushels of like quality; the remainder being spotted, second rate, or almost worthless fruit. Yet who can doubt but that negligent cultivation and a want of due attention to the requirements of this unacclimated tree have been the chief causes of the deterioration?

Changes in the atmospheric conditions of our climate have, without doubt, had much to do with the recent failure of the peach, as all our orchard fruits appear to be on the decline during the past quarter of a century. Atmospheric changes can not, however, account for the entire failure; several other matters bear a part of the blame. Various reports of reliable and interested growers combine to place considerable weight on the nature of the soil, and many of them express their belief in the absence in many soils, otherwise apparently suitable, of some "unknown ingredient" which the peach demands; this is but negative information. Other more certain defects are readily detected, such, for example, as the general exhaustion of the thin sandy soil chiefly selected for peach orchards; the exhaustion of the vigorous constitution of the trees by injudicious selection of diseased or debilitated pits; budding by selecting cions from one-year-old immature trees, in which the wood-producing cells only have been developed; inattention to the selection of a proper site, in which the tree will be exposed during the early spring and late fall, so as to avoid the premature starting of the sap before the severe frosts have disappeared, thereby exposing the expanding buds, and in autumn or early winter shelter preventing the full development and maturation of the wood by the partial ripening of the foliage—

these are some of the causes which, in my mind, have led to the failure of the peach.

To what extent the skillful and intelligent cultivator could avoid the evils arising from the causes above enumerated, we can not accurately determine.

In addition to the presumed evils, the remaining well-defined causes of deterioration are, the attacks of the borer and other pests; the winter killing of the buds in unusually severe seasons, and the blighting of the blossoms from the same cause; the injury to the foliage from parasitic fungi, induced by want of vigorous development, and other contingencies.

The condition of a tree can be determined on inspection by a skillful cultivator. The presence of a multitude of twiggy shoots crowding the interior is an evidence of negligence in pruning; the absence of a healthy green hue in the foliage argues imperfect development of the coloring matter—the best evidence of healthy leaves; this you may call the “yellows.”

The presence of the “curl” or blister on the leaves, showing the attack of a well-known form of fungus which has secured a footing in consequence of the unhealthy state of the tissue, but which will temporarily yield to a vigorous growth at a more advanced period of the season, and the presence of other forms of parasitic pests, are certain evidences of weakened vitality. Once for all it may be safely affirmed, that as the multitude of animalculæ attack the fallen trunk and limbs, and reduce the organs of which they are composed to mere

decaying matter, so these organized vegetable growths of the lowest grades attack the still struggling plant, and insinuating their peculiar roots or *mycelia* into the cells and passages, draw therefrom the juices destined for the support of its foliage and appropriate them to their growth and nutrition. Without these wonderful agents—the scavengers of the vegetable world—we should fail to note the presence of imperfect vitality, and should prize our invalid trees as if they were perfect models of health, to be mortified and disappointed at the unprofitable result.

The practiced eye, however, detects the various forms of minute parasitic fungi on the leaves or bark or wood, and thus is forewarned of the approach of insidious decay. Such, however, is the nature of these forms of the vegetable kingdom that they continue for months and years to increase and spread over and throughout the congeries of cells and vessels, until the tree, with its multitude of leaves and shoots, falls a prey to their insidious attack. So much, at least, has been learned of the philosophy of these minute but innumerable attendants on debilitated growth. How much remains to be learned, we dare not conjecture.

The “curl,” “mildew,” or any other form of such parasites is but the evidence that all is not right within the tree. The sooner we set ourselves to stimulate and restore a healthy growth, the sooner these will drop their hold upon its vitals. “FUNGUS.”

THE SALEM GRAPE.

A WRITER in the April number calls for information in regard to this grape, wishing to know the color, etc., stating that *Hovey's Magazine* describes it as black, or, in other words, so much like No. 4 as to be difficult to distinguish them; also, that the *American Horticultural Annual* describes it as blue, with a brownish tint. Now we do

not wonder that “Grape-grower” is puzzled if he prefers to take such authority instead of the description in the advertisement when the grape was offered last spring in the *HORTICULTURIST* and *Gardener's Monthly*, especially when told in a notice appended that there was a spurious sort in circulation.

There has never been but one grape disseminated by me as Salem or 22, and that is as described in the advertisements last spring and in the circular issued at the same time. The grape is there described as a light chestnut or Catawba color; but every one is aware that this color may be lighter or darker, according to season or location, but would never change to black like No. 4.

In regard to the numbers, now that the grape is named, it would perhaps be best to drop them altogether. If "Grape-grower" will turn to the *HORTICULTURIST* or *Gardener's Monthly* of last spring, he will find that fully explained; he will there see that my original 22 and 53—not those circulating about the country as 22—are the same grape, and mere private marks to protect the public as well as myself from imposition. If the public is in want of this grape as there described, they can find it in any quantity by ordering of the friends of the late lamented Mr. Requa, of Salem-on-Erie, Brocton, N. Y., who purchased the principal part of my stock of this variety; or it can be obtained of me to a limited amount.

We will here state, for the benefit of "Grape-grower" and others, that before the Salem was offered last spring, and afterward, we had letters from parties in different States saying they had 22 al-

ready in fruit from other sources, describing it as like No. 4, naming the parties of whom they bought, and to whom we had never sold a vine. This, of course, was the spurious sort. As it was generally known that we were about offering a new grape, the parties having the spurious 22 would at once put the name of Salem to it; therefore we were led in issuing it to change the private number and substitute another; but thinking that a few of the true sort might have been disseminated accidentally, and not wishing to impose on the public, we published the notice referred to, although at a great loss, and to all who ordered gave leave to withdraw if they saw fit before receiving anything for the vine.

One other remark from "Grape-grower" may need attention, where he says my original description of 22 was "amber." Although this description may be correct, as 15 is described as "amber" by Colonel Wilder, we do not recollect to have given this description of it publicly, as we never advertised it or described 22 in any of the circulars of the other numbers.

We hope the discrepancies alluded to are now cleared up to the satisfaction of "Grape-grower;" and will here repeat that there is but one true Salem, and that as described in the advertisement of last spring.

E. S. ROGERS.

HARDIHOOD OF APPLE-TREES.

THE rapidly increasing settlement and cultivation of our northwestern territory, together with the increased interest and attention given to fruit-growing, is demanding a knowledge of all the items tending to constitute a hardy tree. The comparative hardihood of any one variety when root grafted or budded some four to six inches above the crown, has been freely discussed, and we believe has resulted in a pretty general impression that the budded

tree is the best. One capable writer has tried to soften down the generally considered error of root grafting by distinguishing a line between grafting on *short* or *long* pieces of roots, claiming that the great trouble is owing to the few and uneven roots formed on the short pieces, and the disadvantage or difficulty of taking up the trees without cutting them badly.

As, in our knowledge, the roots, however started, form in ratio to the growth

of the top, we do not see how a graft inserted on a piece of root one foot or more in length gives any more hardihood to the tree than when the graft is put upon a root of only four inches in length. It has ever been our impression that the seat of vitality—the point of hardihood, if you will, because the more of vitality the more of endurance—lies in what is termed the crown, that point from whence, in a seedling, the root shoots one way and the top another. In any plant grown from a cutting or a root graft, this natural point is lost; nature is forgotten, and art has assumed control; a more ready and rapid propagation is obtained, but at a measurable loss of natural vitality.

In the study of our cultivated varieties we have learned that some have more of hardihood to endure climatic change than others, no matter how propagated; and as a rule, it is found that the nearer the cultivated sort is allied to a natural or crab, the hardier it is. In vegetable life, as in animal life, all have not alike the same vitality and capability of endurance; and when we work any one of our cultivated sorts on any number of seedlings, the results are not alike, as every practical observer knows. Greater uniformity is maintained when a variety is root grafted than when budded upon an indiscriminate lot of seedlings, an item which we view as sustaining our idea of the vital point and the influence obtained thereby.

The recommendation of the Wisconsin State Horticultural Society to grow apple stocks from the seed of Siberian Crabs, because of their hardihood, is a good one; but in order to follow our own views, and enable the grower to obtain the greatest hardihood for his permanent trees, great care must be taken, first, to see that the tree from which his seed is taken be per-

fectly healthy. Second, to select his seeds, using only the largest and plumpest. Third, when his seedlings have grown one season, and stood over one winter, to go among them, and root out all that show any sign of feebleness. These three conditions performed, there is good reason to suppose the operator has material on which to build permanent growth, which he may do by budding or grafting at any point not less than four inches above the natural crown of the seedling.

Nurserymen will of course object to this mode of procedure, as involving too much care and labor corresponding with the present price of trees. But if there is really anything in it, as according to our belief, then it would be better for the planter to pay four or five times the present price of trees, each one of which could be depended upon, than to receive the trees grown upon the present cheap and reckless manner as a gift.

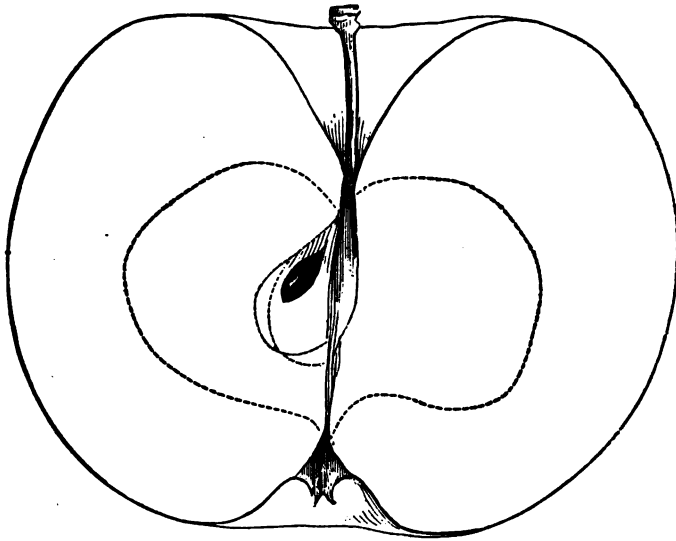
As we have said, the northwestern portion of our territory is alive to this subject, and demanding attention and knowledge thereto, insomuch that we believe a stock of apple, pear, and cherry trees, grown upon principles tending to give them increased hardihood, would as soon as grown find ready sale at remunerating prices. The people are becoming rapidly educated in fruit-growing. Instead of the orchard being an appendage to the main objects of the farm, to be planted and then neglected, it is yearly coming more and more to be the leading item, one that can not be overlooked even by the owners of the largest of stock or grain farms; and with this knowledge of the value of fruit-growing comes a corresponding knowledge of the difference in value of trees and vines, and a willingness to pay therefor.

EVERY kind of fruit is increased in size and improved in quality by attendance on early thinning. If done early, the one pear

or peach left where two were, will often become as large as both would, and be vastly better.

QUINCE OF COXE APPLE.

FRUIT: size, large; form, roundish oblate, broad obscure ribs; surface, glossy, uneven, or wavy; color, clear greenish yellow with faint shades of deeper green suffused—few minute dots; stem, slender; cavity, broad, open, deep; calyx, nearly

FIG. 52.—*Quince of Cox's Apple.*

closed; segments, erect, slightly recurved; basin, open, deep, abrupt, slightly corrugated at bottom; flesh, yellowish, breaking crisp, juicy, a little coarse grained, subacid with a distinct quince-like flavor; core, small; seeds, abundant, irregular. Season, December to March; "very good."

"EASTERN EXPERIENCE IS OF LITTLE AVAIL TO US."

THIS remark from the report of the annual meeting of the Iowa State Horticultural Society is made the "text" for an editorial article in the March number of the *HORTICULTURIST*. The article dissents entirely from this statement, and says that "if the writer thereof lives a few years, and makes fruit-growing his study, he will find that he was very far from the truth when he wrote it;" and "Iowa is not so

much a distinct State in soil or temperature that she can afford to throw away the experience of New England," etc. If I am not mistaken, the author of your "text" is a friend of mine who passed the meridian of life in the noble State of New York, and with ripe experience in Eastern fruit-growing, removed to young Iowa, and using that experience here, met with disaster; but now, after long years of extensive experi-

ments here, having abandoned old notions, he has achieved a success that is a glory to his old age, and made the above remark guided by the light of more than a half century of observation and practice in *both* the East and the West. Further: the writer of this left the old Bay State fifteen years ago to make a home in young Iowa, and bore in his breast that self-sufficient, self-satisfactory feeling of superiority that nearly all Eastern people feel who do not know the West. Availing myself of the best Eastern knowledge that I could get from books or men, I ordered a huge box of trees of Baldwin, R. I. Greening, Fall Pippin, Louise Bonne de Jersey, Black Tartarian, Crawford's Early, etc. They were transferred to my new home, and after the lapse of one Iowa winter they were all dead or hopelessly crippled.

Guided by the same light, a similar selection was ordered the next year, and a similar result followed. The third year a similar but smaller list shared a like fate. Chastened, but not discouraged, a gleam of light from a nearer but smaller luminary arrested my attention. It occurred that perhaps a totally different soil and climate might require a different selection of varieties and a different mode of treatment. Acting on this thought, I have now an orchard of 3,000 vigorous young trees, from one to twelve years, planted in perfect health, and promising to yearly increase the amount of beautiful fruit they are now producing. Among them all there are not one hundred trees of varieties that I would select in New England.

Eastern experience is of very little avail to us. It taught me that Baldwin and R. I. Greening were just the thing to plant. Western experience has taught me that they will winter-kill like a fig. Eastern experience taught me to prune in winter for wood, and in summer for fruit. Western experience has taught me not to prune in winter at all. Eastern experience taught me to train trees with open heads, to let in the sun and air. Western experience

has taught me to grow trees with compact heads, to keep out the searching sun and winds of the prairies. Eastern experience taught me to manure all kinds of fruits liberally. Western experience has taught me that it will not do. In Massachusetts the soil is thin and poor; in Iowa it is rich and deep. In Massachusetts the air is moist; in Iowa it is dry. In Massachusetts the summer is cooler than in Iowa; and in Iowa the winter is much colder than in Massachusetts. In Massachusetts the Baldwin apple is the most profitable; in Iowa it winter-kills to the ground. In Massachusetts the Catawba will never fully ripen; in hot, arid Iowa it seldom fails. Massachusetts is built on granite—Iowa on limestone. The soil, seasons, atmosphere, flora, geology, and geography are essentially different, and of course require different treatment.

My birth, boyhood, and early manhood were spent in the dear old Bay State. My manhood's prime till I have passed the half-way post of life's allotted span has been wholly devoted to fruit-growing in young Iowa, and I beg to corroborate the statement, that Eastern experience is of very little avail to us. I should not have written these lines, but your article was so typical of the opinion that pervades the whole East, that I thought I would give you the Western view of the subject. Even the *American Agriculturist*—with cosmopolitan claims—advised a Minnesota correspondent to plant Baldwin, R. I. Greening, Fameuse, Roxbury, Russell, or any variety that *succeeds in the same latitude East*. Every one mentioned will kill but the Fameuse; and the principle is wholly wrong, for some of our hardiest sorts are from the South.

The American Institute Farmers' Club, New York, ridiculed a correspondent from the far Northwest who inquired for hardy sorts of pears. They replied, with a sneer, that all pears were hardy. They did not know what they were talking about. I will give one hundred dollars for one half

dozen pear-trees of any variety of fair quality that is perfectly hardy here.

Iowa has often been condemned as a poor fruit-growing country, but it has been only by those who have tried it in the light of Eastern experience. We are slowly, but perseveringly, working out the prob-

lem of fruit-growing on the great rich prairies of the Northwest. We are already achieving success, and in due time shall be able to show results commensurate with the fertility of our soil and the vigor of a growing young State. D. W. ADAMS.

WAWKON, IOWA.

MASSACHUSETTS vs. NEW JERSEY.

BY ROBERT MORRIS COPELAND.

NEW ENGLANDERS are such a wandering people, and move from home so easily when they think they see a possible advantage in change of residence, that it will be difficult to persuade them that it is not necessarily climate or soil which makes one part of the country preferable to another. The stubborn soil and cold climate of New England seem to be unfavorable to profitable cultivation of the earth, and young men who would like to get their living by farming emigrate to more favored lands. Those who prefer grain or stock raising go West; cotton and sugar attract some South; while New Jersey, Maryland, and Delaware offer immense inducements to the market gardener and fruit culturist.

The demand for fruit and vegetables has increased so rapidly in the last ten years that every available acre near the great cities has been in demand, and men have learned that the hitherto neglected sandy pine barrens of the three States above-mentioned are the best kind of land for market gardening. The sandy soil is easy of cultivation, warms readily, and is responsive to manure. Every month the horticultural magazines give almost fabulous accounts of the bushels, baskets, and pounds of fruit grown to the acre, and almost convince the reader that he only is truly happy who has a good bit of New Jersey soil to cultivate, and a family of growing children to help him take care of the crops and gather the fruit.

But even the seductive stories of the

profits which attend upon good market gardening fall a little when compared to the incomes which have been and may be derived from the vineyards and peach orchards, which occupy favored places near the lakes or along the borders of the rivers of the Middle States. It is not strange that the repeated and verified statements of profits attract the men who have worn out a life in toiling among our boulders and gravel, and that fathers lend some of their hard-won earnings to their sons to go and reap in the new harvest fields. If six or eight hundred dollars per acre are to reward those who have the enterprise to go away from home, the wonder really is that any remain to till our own lands.

But we who live in New England and make shoes and ships, sell cloth and leather, must live too, and must, and want to eat fruit and early vegetables; and although we are very glad that our relations should grow rich by gardening, we do not like to pay them a fair price for their crops and add the cost of transportation besides. We still believe, with the *Protectionist*, that the nearer the producer and consumer live to each other, the better for both.

I believe I can show, by a few facts and a little reasoning, that there is no need of New England's looking beyond her own borders for anything which the soil and climate can give, unless it may be peaches; but certainly all the small fruits and garden crops may be produced as early and

cheaply in Massachusetts as in any other of the Northern States.

As I propose to consider the profits of market gardening, it will be best to state at first that the principal element of success, as shown by increasing profits, is the control of the temperature with which plants are to be surrounded in their infancy. Of course it should be admitted that no man ought to begin this kind of work who does not love it for its own sake, as well as for the money it will bring. No occupation demands more attention and hard work; and no one will succeed in it who is unwilling to give his whole time, thought, and energy to it.

The market gardener's peculiar profit, as distinguished from those which any farmer may hope for, are derived from his extra early and late crops. Of course I do not mean to say that the middle or summer crops are unprofitable, but they have to compete with the supplies which farmers, from far and near, may pour upon the market. To grow early or late fruit or vegetables requires some previous education; an investment of capital in hot-beds, green-houses, tools, manure, and other appliances which are requisite for producing crops out of season. To use the materials, after they are produced, successfully, is the test of the skill of the gardener, and it is here that we find the most remarkable differences in men's success or failures; and, at the same time, this is the most interesting part of the business. It gives occupation when all other out-of-door work is suspended, and opens a very wide field for individual enterprise and progress. The successful man must be a careful observer of the weather; must notice and remember the little advantages which plants derive, particularly when young, from variations in food and temperature and extra care, and must be quick to take advantage of every new discovery and invention which relates to his occupation.

Early crops have the advantage that they do not compel their grower and vendor to

be an absolute slave to the markets; there are but few competitors, and no one is compelled to spend all his night getting to market lest he shall be too late for morning customers. The earliest crops may be prepared and sold with as much deliberation as any other kind of merchandise.

From the earliest crops, if economy has been observed in their production, and every advantage taken of the weather and good cultivation, profits may be realized which fully equal those derived for any other kind of gardening or farming. It is in this direction that Massachusetts farmers and gardeners may compete with any other men occupied in the same way; but not all men are equally successful—in fact, but comparatively few succeed in the best sense of that word, even when they have invested all the money that their business seems to require. In order to understand the differences between the possibilities and realities of market gardening, I must first describe the common method of preparing and producing early crops.

While describing, discussing, and perhaps condemning the ordinary methods by which market gardeners raise their early crops, I would not have any one suppose that I undervalue the results to which our market gardeners have attained; but they are small when compared to what might be expected if men would only avail themselves of their opportunities.

The market gardener provides himself with a quantity of glazed sashes, six feet long by three feet wide; these sashes are laid on the ordinary plank hot-bed frame, well known to every reader; the frame rising about a foot from the surface of the ground.

At the proper time to begin winter forcing, a cellar is excavated beneath the sashes as deep as experience has shown to be best; this cellar is filled with at least three feet of solid fresh horse manure, which is overlaid with about six inches of fine loam. Soon after the bed is made the manure begins to heat or ferment, and gives out a

great amount of heat, which warms the superincumbent earth and the interior of the frame.

To preserve all the heat which is generated, the outside of the frame is banked with fresh manure, and the sashes at night and in dark weather are covered with mats or shutters; whenever a cold spell threatens, the manure on the outside is replaced by a fresh supply, and additional mats laid over the glass.

As soon as the heat has moderated a little, the seed is sown or young plants pricked out in the earth of the hot-bed, where, stimulated by the bottom heat, they are expected, with the aid of air and water, to grow to mature plants.

Of course it is very difficult to control or reduce the generating heat; the only method is to let air in by raising the sashes. As the gardener can not get into the frame to judge of its constant heat by the senses, and can only get slight assistance from the thermometer, the adjustment of the temperature becomes the test of his skill. Too much heat will draw and burn the plants; too little will damp them off.

Besides the extreme difficulty of managing heat, is the inconvenience of getting at the beds to transplant and weed, and the impossibility of doing either of these things in cloudy and cold weather. At such times, however important it is to overhaul or reset the beds, nothing can be done lest the beds cool off too much. Cloudy days are the best for transplanting, as the plants suffer least from the check at such times, but the necessity of maintaining heat leaves the operator no choice.

When one crop, as lettuce, has been taken from the winter hot-bed, all the labor of preparation must be repeated, as the

heat—the one absolutely important element—is exhausted. Spring hot-beds fare better in this respect; the heat of the sun will replace the waning strength of the manure, and the lettuce can be followed by radishes, cucumbers, tomato plants, etc. In spite of all this labor, anxiety, and chance, winter-forcing is often very profitable, but certainly precarious. It is not strange, then, that market gardeners, who know all the risks, should look longingly at the coast of Virginia, the Carolinas, and even Florida, as the very promised land for winter-forcing for the Northern market. In these favored regions the spring sun can perfect far more than manure can even promise; but there are difficulties in the way of growing early crops at the South for Northern consumption: they are of so perishable a nature that long transportation may ruin them, and the producer who lives too far from market to give his personal attention at least occasionally to his sales, will hardly rival the gardener who can carry his own crops to the consumer.

Hot-bed culture in some form, then, will continue to be the source of all early crops for city use. The question now presents itself, do market gardeners avail themselves of the best methods for producing their crops? If they do, it would seem to prove Nature to be capricious, and to show that some plants are willing to thrive under circumstances very unfavorable to all other species; for if florists, and those who grow fruits for early markets, are unable to attain satisfactory results by using manure-generated heat, but can raise flowers and fruit at will by fire heat, may it not then be reasonably supposed that market gardeners can advantageously substitute one for the other.

[TO BE CONTINUED.]

TRAILING ARBUTUS.—For rock-work, the *arbutus uva ursi*, or bear berry, is one of the prettiest and best of our native plants.

Leaf mold or peat sand in which to plant it, is essential to its successful growth.

AN HOUR AT HOME.

BY JOHN S. REID.

For the past year my grape culture may be put down as a failure, and notwithstanding all my enthusiasm in its success, candor compels me to admit this result.

For these three years past my Catawba vines have produced no ripe vintage; for although they opened splendidly, and summer seemed to indicate a large yield, the rot finally ruined the prospect; and when October came, almost nothing was found but shriveled and blasted fruit, unfit for any use whatever—no grapes, no wine!

After experimenting for almost twenty years, I find the Catawba, from some cause or other, in this section unfit for vineyard cultivation, and therefore last fall I dug up my vines of this description, and am replacing them with the Ives Seedling, a variety said to be much hardier, and free from mildew and rot.

The Herbemont and the Diana are two other varieties which at one time promised well with me, but after one or two seasons they showed signs of mildew, and now I place them as vines suitable only for garden culture, with winter protection.

The Iona, which yielded fruit of most excellent quality, and which was introduced to the grape world as *the* grape, superior and reliable for the table or the wine press, like the Catawba, has given way; and although it is a fruit equal in every respect to any grape cultivated here, it is fast following the misfortunes of the Catawba, of which it appears, to my judgment, to be a seedling.

I have tried the Anna, Alvey, Adirondac, Allen's Hybrid, Clara, Elsinburg, Lincoln, Lenoir, and a number of others of fancy varieties, and have found them all failures, as out-door hardy grapes—not worth the attempt of cultivation.

But there are a few varieties which, with proper common care, succeed well; these

are the Clinton, Concord, Hartford Prolific, and the Ives Seedling, which promise right. To these I may add the Delaware and Israella; the first for hardiness and quality of fruit, the second for earliness and size of bunch and berry. The Rebecca is a most beautiful grape, but has proved with me a complete failure, and so have the hybrids of Rogers.

Perhaps it may be said that my vineyard is not suitable, or that I do not cultivate aright. My vine-hill lies east by south, and in bygone years produced Catawbas equal to any of Kelly's Island. In regard to the cultivation, I have spared neither time, skill, or money; and in making wine, I have been successful as an amateur wine-maker. The climate also is not far wrong, being on the 40th parallel, and my residence on the second bench of the beautiful White Water. Hence I am of the opinion, that when the grape suitable for this region is found, I may yet enjoy my *otium cum dignitate* under my own vine and fig-tree.

I am now past the meridian of life; the snows of fifty winters have powdered my once raven locks, and a few more years are all that I can expect to pass on earth; how pleasant, then, to look forward through a vista of flowers and fruits, to sit under the blossom of the peach and the apple, and in autumn to enjoy their luscious production. Hence, notwithstanding my many failures, I continue planting and resetting, trimming and cultivating, preparing for that evening of life when the hands will refuse their cunning and the strong muscle its action, and labor becomes a burden.

This season I shall plant five hundred Ives and a few hundred Concords, which with those I have, and the other varieties, I will look forward to the enjoyment of a feast of roses, of wine on the lees well

refined, such as I have had in former years, when I sent your predecessor a bottle of my red-cork to wet his whistle.

This is Easter Sunday—cold, bleak, and stormy. The peach blossoms are opening their beautiful flowers, I am afraid, to be destroyed long before the fruit is matured. The green bud of the raspberry has bursted its winter covering and looks chilly and feeble; the grape has begun to swell and the early pear to bloom. May we flatter ourselves that He who tempers the wind to the shorn lamb will so arrange the seasons that spring and summer and autumn and winter shall each in its own proper orbit pervade the world?

My own white and black seedling grapes I am carefully nursing, and testing their quality and strength. As last year was a failure with me in the grape line, they were no exception; still, each showed

qualities of No. 1 grapes, and this season I hope to report satisfactorily their *status* in the list of grape excellence, or not at all.

I wish some grape fancier, who enjoys the pleasure of having something nice in the way of a white grape not found in market, would send me in exchange a small rootlet or a few eyes of his variety, and I'll return in kind from my white. I am anxious to obtain a white grape the bunch and berry of which will equal the Catawba in quality, and excel it in durability and health or power to resist disease.

O that I was on the shores of the Mediterranean, where the Falernian used to flourish, or the grapes of Eschol were found! then I would wander amid the vineyards of the past, and perhaps find some vine whose fruit would unite the luscious sweetness of the Roman with the size of the Jewish grape.

THE OPINIONS OF MY NEIGHBORS.

BY FRANK AMON.

A LITTLE more than a year since I ventured to write down a little of talk had with my neighbors; and as the *HORTICULTURIST* very kindly published it, I am induced again to try my hand at tale-telling; not that I have anything very new or strange to tell, but that possibly my neighbors' opinions and views, as they are practical and good cultivators, may be of use to some readers of your valuable journal who are as yet but little acquainted with horticulture.

My neighbor S., in talking of fruit-growing, says that at one time he believed in confining himself pretty much to one kind of fruit, but that experience has taught him that it is most profitable to grow a variety, and therefore he last year made plantings, and is continuing, of all the small fruits, together with grapes, pears, etc., etc. He feels pretty certain that the use of salt as manure is going to keep his

pears from blight. On this point B. says the salt may give nourishment and a stimulant to the tree, and perhaps a healthy one, but he has no faith in its virtues as a remedial agent. He—Mr. B.—counts pear blight as sporadic or atmospheric, created by sudden and severe changes of temperature acting upon crude and undigested sap, the affection taking place in the leaf vessels, and thus the poison passing down the albumen and developing itself sometimes at one point, sometimes at another. As for myself, I say nothing. I only try to keep my trees growing steadily, not too rapidly; and when I see blight, out with my knife and cut it off way down below any tinge of complaint.

The question of cherry-growing for profit being up, neighbor P., who has some hundreds of trees, said he would plant largely of Early Purple Guigne, Rockport, Pontiac, Red Jacket, and Louis Philippe.

Most money can be obtained from Early Purple Guigne; but the best cherry for all purposes is the Louis Philippe. P. says he wonders where the thought or knowledge of fruit men has been that this cherry has not become more generally known. Neighbor A. says that last year he tried to obtain this cherry at various nurseries, but could not find it. He wishes if any dealers have it they would advertise. He says, also, that he gives nurserymen credit for one thing, viz., they are gradually cutting down their lists of sorts; and little by little the people who very largely depend on what the nurserymen say as to the value of varieties, are planting only the best sorts, and in a hundred trees but a few varieties. With A. I agree, and commend the nurserymen; but I also desire to see the list very much reduced from present numbers. The list of fruits now embraces so many of really superior quality that there is no occasion for growing a second-rate sort. A tree of the Jonathan apple will occupy no more ground than one of Cayuga Red Streak or Smith's Cider; and while the fruit of the first is superior almost everywhere, the others are only good to look at and sell to people who can not obtain better sorts.

While upon this point, I will remark that I have just been looking over some old catalogues, and am almost astonished at the confusion or duplication of one variety under many names which once existed. Truly a great change has been made, but more is yet wanted; as for instance, the Townsend apple is issued by some under that name, and also by its new Western cognomen of Hocking—both being the same. But the apple with perhaps the longest string of names is the Nickajack, which has twenty-eight synonyms, such as Berry, Red Hazel, Wall, etc., etc., and unfortunately is yet issued by some persons as distinct varieties under the synonyms.

But enough of this: it was not what I set out to tell you. Neighbor E., who in talking of planting peas says he gives all credit as an early pea to Carter's Early, states that last year he planted it side by side same time with Tom Thumb, Early Gem, and some others, and gathered first from it. For late peas, he also says there is nothing as yet superior to Champion of England.

Neighbor A. says in planting and growing blackberries and raspberries he shall always practice the hedge system, *i. e.*, growing them in rows, of two feet wide or so; and every year after cutting out the old canes, and such small weak ones as are not wanted, he spreads in among them a coat of two or three inches thick of manure. This, he says, enables him to get large crops of fine fruit even when we have a drought or great heat.

Neighbor E. says the growing of the gooseberry is one of the most profitable of small fruits, but that we want some one to give the subject attention and raise us a seedling that shall be as good a bearer and free from mildew as the Houghton, and as large and fine quality as any of the best European sorts. This he says can be done, and he hopes some one will go about it. He says the largest and best for market now is the Mountain Seedling, but that while it produces abundantly and is of a large size, it has too thick a skin, and is too coarse for anything but to sell.

Speaking of currants, he said that nothing yet equaled the Red Dutch under high cultivation. The Cherry, Versailles, and Fertile d'Angers he thinks so near identical as it to make it useless for a man to buy the one if he has the other. In some markets, he says the large size of the Cherry currant will perhaps make it command a better price; but for canning or jellies it is not so rich or sweet; and once a person has bought it, they will drop it for the good old Red Dutch.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

SUMMER PRUNING THE VINE.—The summer pruning of grapevines commences with the first inch of growth, and if then performed, and carefully continued during the entire season, we should hear nothing of the injury attendant on its practice, nor could we find an opponent thereto. It is by rubbing away at once all buds, which, if left, would grow to useless wood—it is by carefully just nipping the end of a shoot and directing its energies into more rapid and perfect development of the wood and leaves already formed, that we can summer prune, guiding the supply of food to the sources we desire expanded; and yet our most strenuous opponent can find no point of attack; for in this course we have never robbed the vine of any amount of expended food, or by the destruction of a single leaf or twig sent a vibrating thrill of disease toward the root.

It is already time to be about the work, and in many sections perhaps long past the time, for the seasons of our Southern friends are much earlier than ours.

According to the mode of training and winter pruning, seek now to guide the sap and growth into canes for next year's fruiting, and also into strong and healthy leaves on those already setting with fruit, carefully and severely rubbing out all buds or young shoots that tend to crowd the vine with foliage and at the same time extract supply from the roots. The simplest, and we believe the best method, is that of renewal canes from the ground yearly; and the vine should be now carefully studied, to judge of its capacity to fruit another season on two, three, or more canes, and

such should be left and carefully guarded—not even a lateral touched during the season—but all others should be rubbed out and kept out.

DON'T MULCH YET.—We believe in mulching as much as we believe in good cultivation, for it is a part of it; but there is a time for benefit to be derived in the greatest degree from both. Light, heat, air, and moisture are as essential to the growth of roots below ground as they are to that of leaf and twig above; but if the mulch is put upon the ground early in spring, the direct action of these elements is lost, growth is retarded until heat has approached from a side connection, and it is then continued often late in the season, resulting in an immature, unripe condition of the plant. We have found our best results to come from stirring the soil frequently until the summer heat, then apply our mulch, removing it again early in October, and again applying it as soon as the ground is well frozen. By this course we give our roots, in the spring, the benefit of the elements they need to make perfect growth; we keep the powerful rays of the midsummer sun away and thus give them a longer time to fully mature wood and root; we give them in autumn the action of the atmosphere to enable them to gradually harden the root and branch and fit it for the extreme cold of winter; and in winter, after having frozen them to sleep, we cover them so that they may not be awakened from week to week, but continue their nap until such time as, by the natural order, they should again pursue their appointed course.

FLOWER GARDEN.—Bedding out is now the principal business. The arrangement of the beds in tasteful forms to show well, as well as the placing of plants relative to color, is a work of considerable thought, and too often results in failure, because of too great haste and want of consideration. Do not get the beds larger than your plants will fully fill. A small form well filled is better than more breadth and with a bold show of naked soil. Place your brightest colors—as crimsons, scarlets, etc.—in the center, and surround with lighter shades. An edging of dark purple around shades of pink and white is also sometimes effective, especially with beds of quite small size. It is important to have the plants well hardened, before placing them in the beds, by careful exposure to the weather, at first by day only, but in the end by night also. Choose dull dry weather for planting, if possible, and have the plants rather dry, for if recently watered they will not turn out as nicely. Water freely when set, and cover the surface with a light mulch. The Variegated or Striped Japan Maize forms one of the most showy and desirable plants for the center of large beds, or for creating a bold, attractive point in the distance.

HARDY FERNS.—No class of plants affords as much satisfaction to the grower the year throughout as do the native hardy ferns. Our forests, in many sections, abound with them in great variety, and at this season of the year they are easily removed. A little peak of rocks, if not in artistic taste, is soon relieved and made bright by the introduction of a few hardy ferns; and when they are mingled with *Daphne Cneorum* and *Juniperus Squamata* or *repens*, the effect is always pleasingly attractive.

ANNUAL FLOWER SEEDS should now be sown in the open ground. Prepare the ground very fine, and with small delicate seeds sow them, and then press them into the ground by a piece of board, leaving the board afterward over the whole, but

raised say one or two inches from the ground for a few days, or until the seeds are fairly sprouted, when the shade should only be on during the middle of the day. Some of the coarser seeds may be covered from one sixteenth to one quarter of an inch deep, and a few will bear half an inch; but more are lost by too deep than too shallow covering. Don't forget to shade the seeds until after they have fully germinated.

PLANT EVERGREENS.—Throughout most of our Northern and Western States the month of May is the best time to transplant evergreens. Remember that they give life and character to your home in winter; serve to break the storms and measurably to soften the temperature; are now cheaply and easily procured, and you owe it to your fellow-men, if not to yourself, to plant them. We would have them on all our Northern and Western boundaries. We would mingle them occasionally in our orchard, and hedge our small fruit grounds and vegetable gardens with them everywhere.

THE AMELIA PEACH.—T. S. K. is informed that I was fully aware of there being a Southern peach described under name of *Amelia* before I described Mr. Husmann's seedling; and furthermore, he is informed that the naming of the peach was no act of mine. I merely described the variety under the name its owner chose to apply to it. The Southern seedling I have never seen, and know nothing of it except from catalogue descriptions, which unfortunately are so much at variance that I have sometimes doubted whether our Southern friends themselves knew just what they were growing under the name of *Amelia*. I shall be most happy to receive specimens of the variety the coming season from my Southern brother pomologists, and am now taking measures to inaugurate an interchange of fruits among all the members of the Pomological Societies' Committees during the coming season.

F. R. ELLIOTT.

A NATURAL RURAL ARBOR may be grown in a few years by planting trees at equal distances apart, either in a circle or hexagon form, and as they grow, interlock the branches; and when high enough, bring together the tops at the center to form the roof. Bending outward, or cutting away occasional inside branches, will of course have to be done from time to time; but it is of comparatively little trouble, and four to five years will often construct a summer-house more enduring than one man's life. The Osage Orange, the Scotch Elm, or American Birch are some of the good trees for this purpose; the latter perhaps being a little too open or scanty in foliage, but exceedingly pretty in the results as we have seen.

PEAR AND APPLE TREE ARBORS.—Many persons appropriate the ground devoted to the main walks in their gardens by planting grapes, and so training them as to form an arbor under which they walk. It is undoubtedly a good plan, but by reason of the frequent renewal of trellis, or at first forming it of iron, is rather an expensive one. The apple and pear tree may be just as easily bent and trained to form arbors and produce fruit as the grape; and with this advantage, that when once formed they will continue the arbor of their own strength, and form without the aid of wire or slat-trellis. We grow fruit so easily, as yet, and land is so cheap, that we practice little economy in use of land, or study little the facility by which the growth of tree and plant may be directed to any point or form.

MR. EDITOR: In the April number of the HORTICULTURIST I notice a correspondent, Wm. Sumner, of South Carolina, says he has a remedy for rot in the grape. Now, let me propose to him to place this remedy in the hands of a few careful grape-growers in different sections of the country, imposing on them secrecy as to the *modus operandi*, and if they report favorably next year he may realize a handsome bonus for his discovery. I believe

there is not one horticulturist in the United States that would be unwilling to pay a good price for a remedy against rot in grapes or curculio in plums.

Yours, etc.,

O.

LOUISVILLE, KY., April 8, 1868.

GRAPES IN MINNESOTA.—From a letter received from Truman M. Smith, Esq., of St. Paul, Minn., we make the following extracts: "I fruited twenty-seven varieties of grapes last season, and have ten other varieties yet to fruit; but I must place the Delaware at the *head of the list*, and Creveling next. Ontario or Union Village has done finely with me, also the Concord, Hartford Prolific. Northern Muscadine is good *here*, and outsells the Concord, Isabella, or Catawba in this market. It seems to lose much of its foxy flavor here, but will drop from the bunch when fully ripe, and is not a good keeper. Delaware kept hung up in a dry cellar until 7th of February, when the last were eaten."

PLUNGING PLANTS.—In setting pots of plants outside the green-house for the summer, we have found that when embedded in sand, fine charcoal, or even tan-bark, their health and vigor were greater than when the pots were just set upon the surface earth. It is the general practice to set the plants from the house out on the north side of the building, and to occasionally give water; deviating from this course we have found our plants more vigorous and healthy in autumn when again to be returned to the house by selecting a place where the morning sun would reach them, and where some tree or building would throw on them a little shade at noon, and then arrange them by placing a board six inches below the level of the ground, and setting the pots on it to prevent roots working into the soil, and to secure certain drainage; then after placing the pots, filling between them with fine charcoal, if obtainable; next to that, sand; and next to that, tan-bark or sawdust.

EDITORS OF HORTICULTURIST: I notice Mr. Woodward, in the last number of your journal, makes me say: "Hardly any boy of twelve or fifteen would know a peach or gooseberry." I have no recollection of ever having said this. My remark was: "No boy of twelve or fifteen would know a nectarine or apricot." Respectfully yours,

H. W. SARGENT.

Boston, 23d March, 1868.

[The quotation by Mr. W. A. Woodward from Mr. Sargent's article in the *Gardener's Monthly* for December, and published in our March number, page 61, is correct. Mr. Sargent probably had not his notes before him when he wrote the above. The difference is not with us, but lies between him and the *Gardener's Monthly*.]

A NATIONAL GIFT.—CORRECTION.—In speaking of the gift bestowed by the Hon. Marshall P. Wilder on the Massachusetts' Agricultural College Institute, we stated the camellia Abby Wilder as having been grown from seed of the camellia Floyii, which was an error, it having been grown from seed of the Middlemist, fertilized by pomponia.

LILIUM AURATUM.—Although late in season to plant bulbs of this beautiful lily for flowering this season, it should be remembered that the bulb is perfectly hardy, and that the strength of stalk and size of bloom are much increased by the roots being well established in the ground. We therefore advise the purchase and planting of small bulbs, which are now offered very cheap, with a view to next season's flowering. Let the soil be made deep, and rich in well-rotted animal manures; set the small bulbs about one foot apart and, say, three inches below ground; then plant petunias, verbenas, or geraniums between for this season's beauty.

ASSORT YOUR FRUIT FOR MARKET.—It is well proved by record of statements made by our most successful fruit-growers that it pays to assort the fruit before sending it to market. One dozen of the larg-

est berries picked out of a quart and tastefully and showily arranged will often bring nearly as much as the whole quart, when the large are mixed with the small; and this rule of superior size and show commanding the superior price, holds good all through the lists of fruits.

CULTURE OF GLADIOLUS.—As a background or center to the flower border or bed, the various gladioli must not be forgotten, as they add a special enrichment to our gardens often when there is a dearth of other flowers. In preparing the ground for them, it can hardly be dug too deep or made too rich with well-rotted animal manure. An excess or scarcity of water is opposed to their wants, and a deep, well-drained, strong loam is the best; but if a choice must be made between a position liable to be too dry or one liable to an excess of water, the dry one is best; because liberal watering can be given, and manure watering once a week is especially valuable to them. When planting, select the strongest bulbs for the most prominent positions, and after carefully rubbing off every small offset at the base, divide and set them singly, and at a uniform depth in the ground, and equal distance apart from each other. The inferior bulbs and small offsets should be placed in some retired portion of the grounds, or in pots in the reserve garden, as many of the small bulbs will bloom freely, but would not keep character and proportion with the best.

CHEAP BELL GLASSES.—A correspondent writes for information about a cheap bell glass for gardener's use. He says, "Last season a friend of his saw, somewhere in New Jersey, cheap bell glasses in use that cost about six dollars per hundred." Our correspondent does not say where in New Jersey. Can any one tell?

LETTUCE if sown now in the place where it is to grow will be good, but it is too late to sow for transplanting.

THE FIG.—Of all the semi-tropical fruits none are more deserving of cultivation or more easily grown than the fig. Under glass in the green-house it will ripen two crops of fruit in a year, and even when kept in pits or light cellars during winter it will ripen fruit in succession during summer.

Young trees are very gross in their habit of growth when unlimited space is allowed to their roots; consequently they do not arrive at a bearing state so soon as those having their space somewhat limited. In our observance of the practice of various growers, we have witnessed the best results from trees planted in boxes or tubs about eighteen inches deep, with nearly one half filled with coarse charcoal and gravel for drainage, and the trees so planted that their roots were all near the surface. The giving them only a shallow soil to work in, with good and thorough drainage, seems at once to dwarf the plant, as it were, and bring it immediately into a bearing state. Care must be taken to water freely and often during the growing and fruiting season, and all the training or pruning should be done by the pinching system, in order to check superfluous growth and advance the formation of fruit spurs. The watery suckers, which are often seen around the stems of fig-trees in the usual way of managing them, should always be kept off; and while a stem of one foot or so be given to form the head of the tree, all below should be kept clean, and all above be regularly pinched into the forming of a regular compact, bushy, yet open head.

STIR THE GROUND FREQUENTLY.—A frequent stirring of the surface of the ground during the early and growing part of the season is almost, if not quite, as good as a coat of manure. In fact, our experience and observation have taught us that we succeed better with our young plantations, or our bearing ones, of raspberries, currants, dwarf pears, etc., by a regular system of stirring the surface soil at least once a

week, than by means of a heavy dressing of manure and only two hoeings for the season. A light, loose surface admits heat, air, and moisture, all combining and necessary food for the plant; while a hard, compact surface excludes these influences and prevents the action of chemical or natural changes, and hence the comparatively moist condition of the plant.

ROSE SUCKERS.—Notwithstanding what may be said, a large number of the hybrid perpetual roses grown and sold are budded on the Manatti stock, and at this season of the year the cultivator of such roses needs to watch carefully the shoots from his rose-bushes, lest some of them prove to be only the stock or a sucker from its roots, which, if left to grow, will in a very short time rob the main plant in such a degree as soon to destroy it. The sucker or false shoot can be easily detected by its habit, spiny wood, reddish color, etc., and should be at once rubbed out.

TO THE EDITOR OF THE HORTICULTURIST: There is considerable force in the remark you made lately, that of the small list of apples recommended as successful over a large extent of our country, half or thereabouts were recommended by the veteran Coxe fifty years ago.

But there has been progress, nevertheless, for an examination of his valuable and interesting work will show that for summer he had nothing equal to Early Joe, while for fall Ohio Nonpareil is beyond his best. And it is questionable if any variety he describes approaches anywhere near Rome Beauty and Ben Davis for profitable orcharding.

R. J. B.

FAIRFIELD Co., OHIO, April, 1868.

CONTINUE to sow peas two or three times during the early part of this month, for the purpose of lengthening out the season. Veitch's Perfection and Traite's King of the Marrows are two good kinds to sow at this time.

SALE FAIRS.—The New Jersey State Agricultural Society are about to inaugurate a new feature in the agricultural exhibition of this country. They have put forth the programme of a fair, to be held on their grounds near Newark, on the 20th, 21st, and 22d days of May next. The novelty on this occasion will be the making a mart for the buying and selling of the stock exhibited — horses, cattle, sheep, swine, poultry, etc. In this they are taking a leaf from the book of European practice. Every one knows that these occasions in Europe are grand holidays for the people, and that the amount of sales often reach a very high figure. There is a manifest advantage in these sorts of fairs if properly carried out. They offer to the countryman a chance to dispose of his stock to the best advantage near his home, without going to a great city, there to be at large expense and risk; and likewise to the purchaser, the opportunity to select what he wants when the specimens offered are brought into competition and comparison with others.

We hope this will prove a success, for something of the kind has long been regarded as a desideratum. Information on the subject, or entries for the fair, can be had on application to Col. R. S. SWORDS, the corresponding secretary, at the rooms of the Society, 264 Broad Street, Newark, N. J.

VARIETIES OF FRUITS.—The labors of fruit-book writers can hardly be estimated, when we remember or acknowledge that there are over three thousand varieties of apples named and distributed; over two thousand of pears; nearly two hundred of cherries; more than that of peaches and plums; and of strawberries, untold numbers. Let us look forward with a hope that some of our Horticultural Societies will make a bold push and a first step toward checking the introduction of a new sort without some real superior merit to demand for it a place in the list of those worthy general attention.

PROCURE GOOD PLANTS.—We have repeatedly urged upon our readers the value of really strong, healthy, vigorous plants as compared with those offered at a low rate. And we now again say, do not be deceived into buying plants termed *cheap*; but see to it that every plant is perfect in itself, and pay the grower liberally therefor. The laborer is worthy of his hire; and he who supplies good, strong, healthy trees or plants at a fair price is much more to be commended than the dealer who proposes largely, but fails to supply as per proposal, even at a much less nominal sum. "The best is the cheapest," is an old and good maxim.

SHORT HINTS.—Places of limited extent require far more of study and knowledge to create beauty and due effect than those which cover acres, and bring from time to time, by reason of their extent, some change of view. The small place is presented almost entirely at one view to the eye, and its arrangement, as a whole, whether effectively or otherwise, requires care and thought combined with a fine taste and appreciation of the beautiful.

In laying out and planting clumps and belts for ornament in places of limited extent, care should be taken that the ground is not wasted and the appearance of extent diminished by making them too broad, covering too much surface. As a guide, six to ten feet is sufficient width, if planted thickly with young plants, as it leaves more room for grass, giving the place a lighter, more airy, and elegant appearance, than if crowded and darkened with too much breadth.

Where large surfaces of grass require relief, it may be done with a few good single specimens, clumps of evergreens, or beds of flowering plants, always remembering that, except sufficient roomy walks, no bare ground should be seen that can be avoided. Many places are spoiled by having two or three times as much surface covered with trees as they ought to have.

Care should be taken to prevent hedges, trees, or shrubs from becoming top-heavy, causing the shade and drip from the higher branches to kill the lower, leaving the ground bare at the bottom; so that while the plants are young, it is best to prune all more or less into shape, cutting in the branches gradually closer near the top, and leaving the lower longer, so that every part of the plant can have equal light, air, and rain, thus keeping the ground covered, and every part of the plant equally furnished with good, healthy, well ripened wood, leaves, and flowers. Where the plants have been much neglected, and become thin or bad in shape, a portion of the worst branches may be shortened in one season, which may break during the following summer, and the remainder may then be cut in the next season.

In arranging plants or trees that are distinct in form or color, they should be distributed at unequal distances, and in groups of unequal quantities, so that one thing may prevail in one part and another in another; otherwise, whether the place be large or small, it would present too much of repetition.

OVERBEARING OF VINEYARDS.—We know there are a few persons who believe in permitting the vine to set and ripen all the fruit it will; but we also know that whenever we have watched the practice of such advocates, it has resulted within a few years in either mildew of leaf and fruit, rot, or an imperfect ripening of more than one half the fruit. Our oldest and most experienced vignerons; those who have unwittingly practiced a year or two of overloading the vines; all vegetable physiology and study of the natural laws of life and health, tell us that an undue exhaustion of the system must, if continued, soon be followed by disease or premature death. Acting upon these teachings, the true vineyardist—he who owns his vines and expects to continue yearly gathering the fruit therefrom—will now go over them carefully, note the strength of the vine, and judging

with good common-sense knowledge of supply and demand, remove at once all apparent superfluous or overloading number of bunches while they are yet but in the blossom, and have not drawn from the regular supply food belonging to the vine. Young vines are especially injured by allowing them to fruit freely; and many a one, because his canes are good and strong the second year from planting, permits them to fruit eight or ten bunches, and thus reduces their natural amount of vitality not yet fully gained or matured. In vegetable life an over-exhaustion, while the plant is young and immature, is just as permanently injured as over-working, or in any other way exhausting the natural system of animal life before it has reached maturity.

BACK VOLUMES.—We still have a few bound volumes of the *HORTICULTURIST* of 1865, '66, and '67, which we will send, post-paid, for \$2 50 each, if single volumes only are taken of either years. All three years sent for \$4 50. Those desiring back volumes to complete their sets have now an opportunity to obtain them at a very moderate rate.

"RECORD OF HORTICULTURE." By A. S. Fuller. The second number of this valuable work is now ready for delivery. Every man interested in fruits, flowers, or vegetables should have a copy for the description of new plants, shrubs, trees, and vegetables, with lists of the most valuable, which it contains. Every nurseryman and dealer in plants should have a copy, for it contains the address of 800 horticulturists, who want the circulars and catalogues of others in the trade.

This work does not contain an almanac and calendar of operations, and is not a collection of essays from different writers on different subjects, but gives the experience of one who knows what he is writing about and has no ax to grind himself, except to keep his readers posted in regard to the progress of horticulture. Sent, post-paid, from this office for \$1.

THE HORTICULTURIST.

VOL. XXIII.....JUNE, 1868.....NO. CCLXIV.

SOME OF THE BEST SWEET CHERRIES.

BY F. R. ELLIOTT.

SINCE the publication of my remarks on "Cherries for the West," in the HORTICULTURIST for October, 1867, I have received many letters asking for a selection of sweet cherries most desirable for family use as well as for market.

Quite a number of correspondents in the New England States speak of a want of attention of late years to the planting out of cherries, saying "the people seem to depend on the large old trees which are apparently fast going to decay; and as you know, most of them are of the old Black Heart, American Heart, Chinese Heart, etc., varieties, it follows that few comparatively know of the better sorts which have originated and been introduced to cultivation during the past quarter of a century."

How true this remark of my correspondent may be I can not say; but in traveling through parts of the Eastern States this past winter, it did appear to me there was less attention given to tree planting than should be among so intelligent a people as comprise the great body of the New England States. Fruit-growing has its difficulties everywhere, and from my experience in former years in New England,

and observation of the West, I confess an impression that the same amount of care and attention to the subject will produce more certain returns and successful results in fruit-growing throughout most of New England than in the States of Illinois and Indiana.

And when the nearness to the great markets is considered, and the extra price obtained for fruit computed, it is surprising that land-owners will continue to dig out and blast rocks, and plow up and down steep hills, with stones rolling about so that they have to jump for fear of having their ankles broken, just to grow a little Indian corn or a patch of rye, because their father and grandfather did so many years ago.

The cherry, it is true, is a fruit that quickly decays, and must be gathered and marketed as soon as ripe; but the construction of fruit-houses and the process of canning have come in to readily absorb any surplus amount that may be sent to market; and among the whole list of fruits I know none more reliable for a crop, or more rapidly and permanently to return an interest for the capital and labor invested.

During the first six or eight years a cherry orchard may be cropped with raspberries, currants, etc., and almost invariably trees at six years from planting out will yield a crop that will readily command from five

to ten dollars, so that with trees at twenty feet apart, an acre will pay from five hundred to one thousand dollars a year; and each year as the orchard increases in size, the product and income will increase.

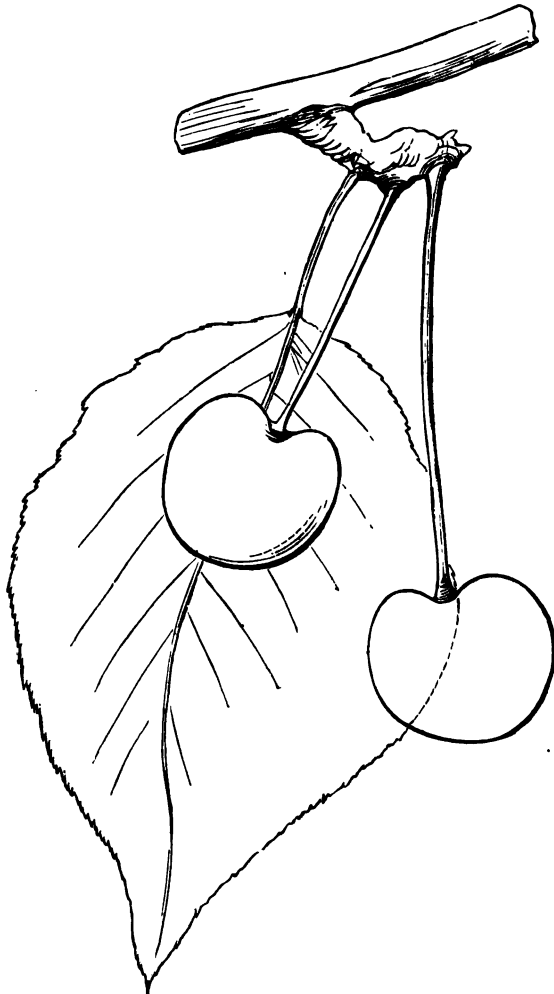


FIG. 53.—*Early Purple Guigne.*

The cherry may be grown in almost any soil, provided it is well drained. A soil of moderate fertility, light and porous, serves to suit it best; and there are many rocky knolls in the New England States

now useless, except as pleasant features in scenery, where the cherry could be grown with great success; in fact, in rambling over the hills and rocks of Connecticut, I have often found the Mahaleb and Mazzard

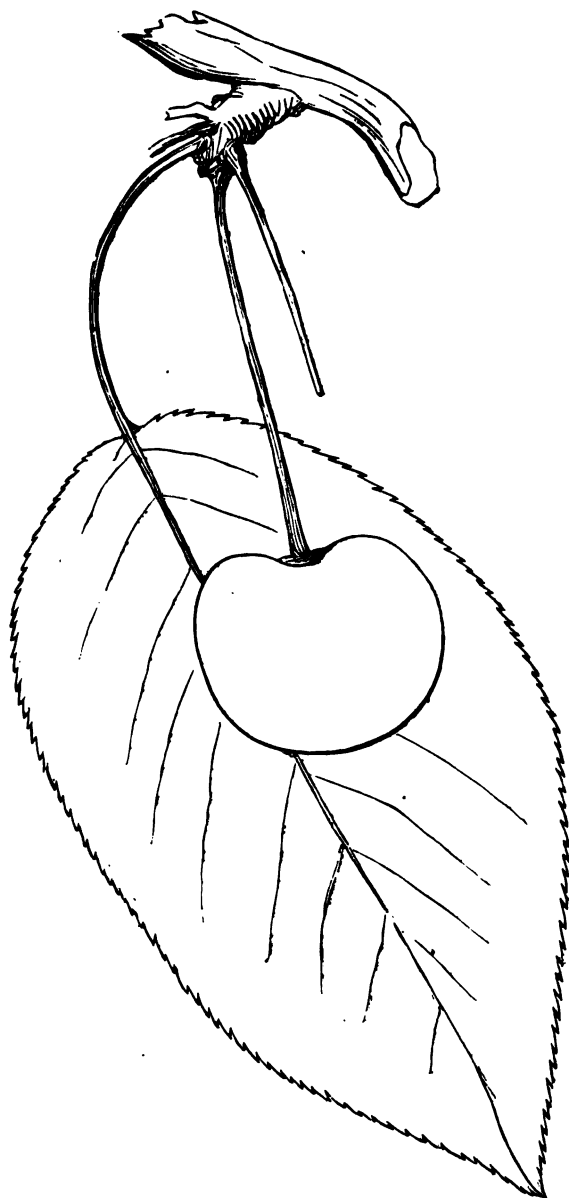


FIG. 54.—*Rockport.*

growing healthily, the seed undoubtedly having been dropped by birds.

The use of the Mazzard or Mahaleb cherry for stock on which to work, or for the

future success of the tree, is a matter of comparatively little account to the orchardist, except in regulating the distance apart to plant. The young tree grows just as

rapidly the first five or six years on the Mahaleb stock, it would do to plant them Mahaleb as on the Mazzard, but it does fifteen feet apart each way.

VARIETIES.

Selecting out of the many a few of the very best in all respects for table and market of fruit, and for growth, health, hardihood, and bearing of tree, is a difficult task; but, as just now is the cherry season, my list may be compared with varieties not named; and if any one has a better than here named, I hope he will report it, at least to me, if not to the public.

EARLY PURPLE GUIGNE.—Although a straggling, crooked grower while young, this variety makes a fine, open orchard tree; and as it ripens the very earliest, and is good for the table, and commands ready sale, I place it as one of the most desirable sorts for the orchard or private garden. The fruit is of medium size, purplish black, juicy, sweet, half tender, and very good.

ROCKPORT.—If I were to select but one variety out of this class of cherries it would be the Rockport. In habit of tree it is very upright and vigorous, bears young and abundantly a cherry of the largest size, of a rich amber yellow mostly over-shaded and mottled and blotched with rich shades of red. The flesh is juicy, sweet, rich, delicious, half tender. In ripening, it almost immediately follows the Early Purple Guigne.

COE'S TRANSPARENT.—I have often been in doubt which to choose, whether this, Delicate, Caroline, or Hoadley; but as Coe's Transparent is more generally tested, it is perhaps safest to advise it. Delicate and Caroline, however, surpass it in real delicacy for the table, while Hoadley is almost its counterpart. The tree is rather spreading, round-headed in habit, of moderately rapid growth, comes early to maturity, and bears abundantly a fruit of medium size, light amber yellow, beautifully mottled with bright clear red, juicy, sweet, tender, rich, and delicious.

KNIGHT'S EARLY BLACK.—For private

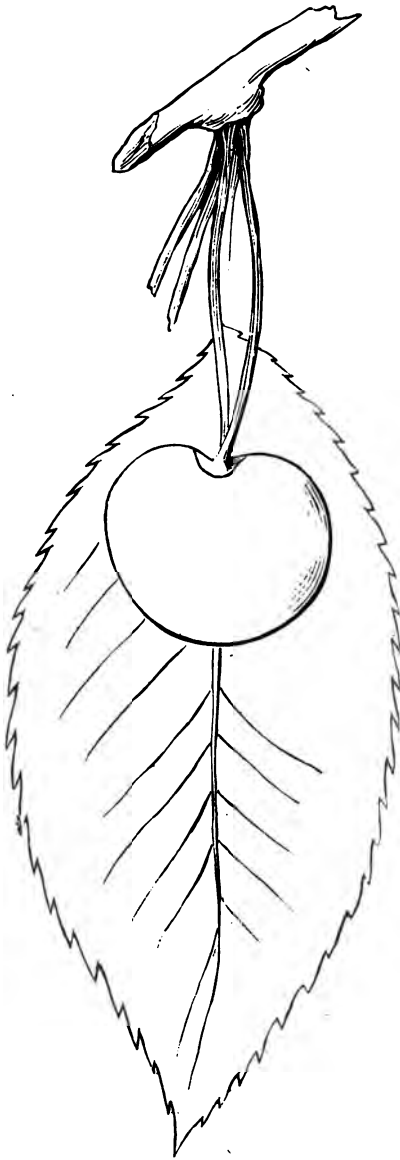


FIG. 55.—*Knight's Early Black.*

not ultimately make as large a tree; and hence if the varieties are worked on the

gardens or sheltered localities this is one of the most desirable varieties, as its fruit matures early and is of the highest excellence; but the tree is a little tender, and unless it can be grown so as to be some-

what protected, it is liable to die out. In habit it is short-jointed, and makes a tree of only medium size. The fruit is large, black, juicy, half tender, very rich and sweet, and fine flavored.

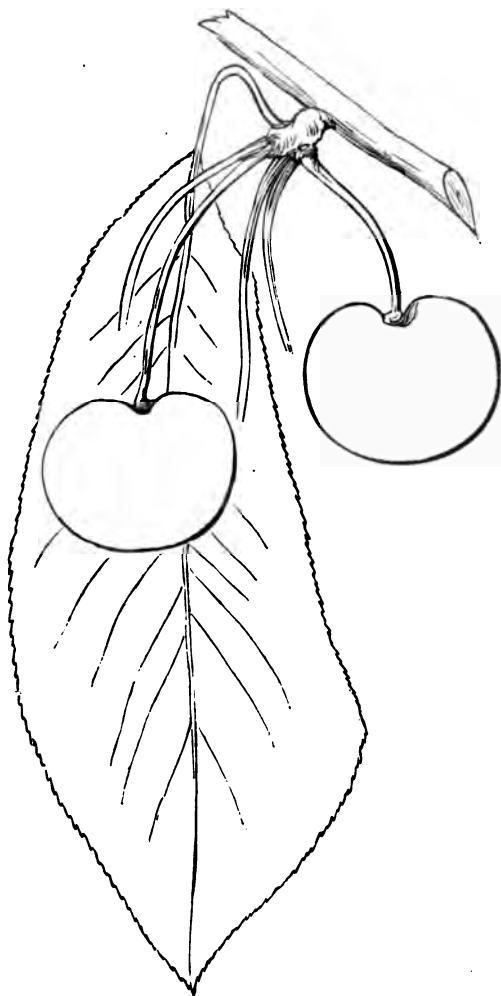


FIG. 56.—*Governor Wood.*

PONTIAC.—Taken all in all for hardihood of tree, vigorous, upright, spreading habit, early in coming to maturity, abundant bearing, large size and good quality of

fruit, with fineness for market, this is perhaps the best of the black cherries. In real richness of quality it is not perhaps equal to Knight's Early Black or Black

Hawk, but its other good qualities abound, and make it a superior sort for family or market use.

GOVERNOR WOOD.—This variety has probably had a more general and wide-

spread reputation than any one among Prof. Kirtland's Seedlings. It is a little too much inclined to overbear, and thus lessen the size of the fruit, unless the tree is in rich soil; but its quality is unsurpassed,

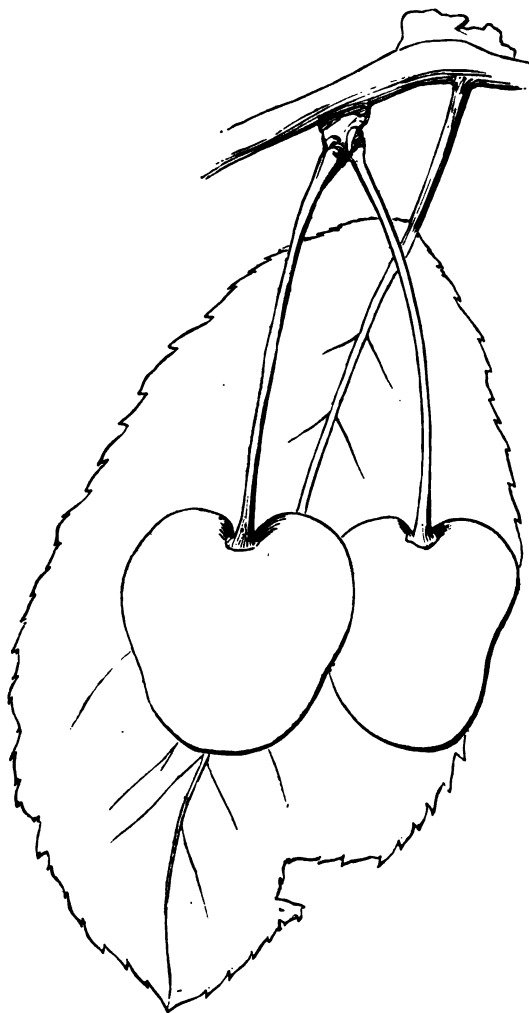


FIG. 57.—*Monstreuse, or Great Bigarreau of Mezel.*

and while for market it, like Coe's Transparent, is too tender, as a variety for the table it should be always in the orchard and garden.

MONSTREUSE, OR GREAT BIGARREAU OF MEZEL.—This is a cherry of very large size, the tree of broad, open habit producing its fruit regularly, and so generally large and

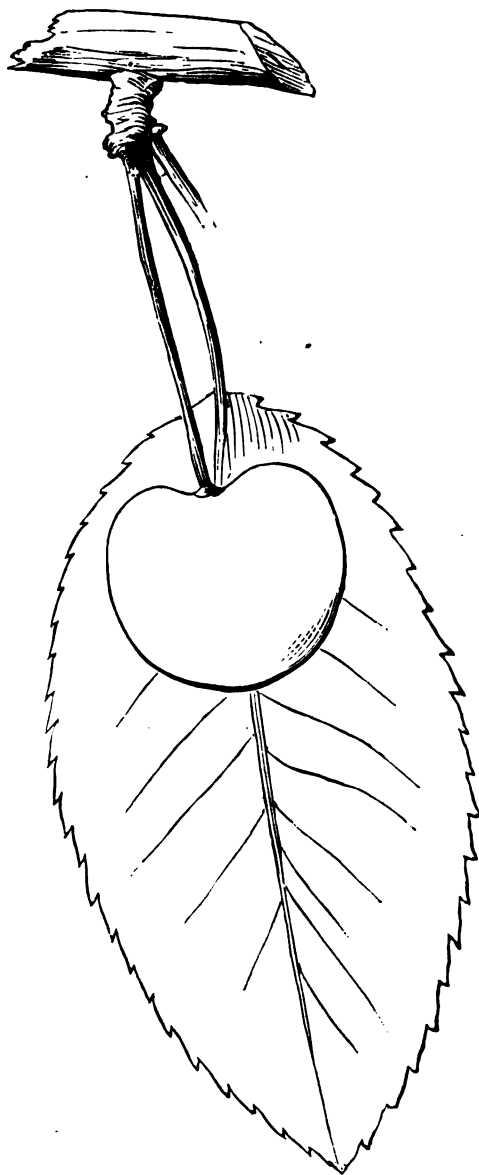


FIG. 58.—*Red Jacket.*

regular in size that it will sell for the highest price although it is not of the first quality. The fruit is a dark reddish purple, becoming black at full maturity, a long

and rather slender stem, flesh purplish red, a little coarse, juicy, and sweet, quite firm, and valuable for marketing.

DAKOTAH.—Those who like the Black

Tartarian will find this variety an improvement upon it. In habit and growth of tree it is very similar; but it ripens its fruit several days earlier, and when ripe it is richer and better flavored. It is also a more abundant bearer. The fruit is large, much resembling Black Tartarian in appearance, somewhat more firm, and bears carriage better, which taken with its time of ripening will, I think, make it a desirable variety when it shall become known.

ELTON.—An old and well-known sort without which no collection can be complete. The tree is an open, spreading grower, a good bearer, of a large, very handsome fruit of a light yellow ground

mostly overspread, shaded, and mottled with red; the flesh firm, juicy, sweet, and very high flavored. It is a profitable and good sort for market or table use.

RED JACKET.—This is one of the latest ripening varieties, coming in with Downer's Late, to which it is far superior in size and quality of the fruit, and the tree equally hardy but more spreading, and growing to a larger size. It is one of the most vigorous and hardy of the sweet cherries, an abundant bearer, of a large fruit mostly overspread with red when fully ripe, half tender, juicy, sweet, and rich; fine for table and highly to be valued for market or canning.

EVERGREEN SHRUBS.

FROM ELLIOTT'S "LAWN AND SHADE TREES."

A MORE common, free, and abundant use of evergreen shrubs should be adopted, because of the cheerful, bright, verdure-like appearance produced in the landscape when their dark and light green foliage and blue or scarlet berries cover with harmonious life-like beauty what otherwise in the dreary winter scenes would be barren and unsightly. Their use among deciduous shrubs can be more general than that of evergreen trees, from the fact that they only rise a few feet, and therefore, unlike trees, can not exhibit shade and gloom to the scene. Many a place is made beautiful in summer from the foliage of shrubs and the bloom of flowers, that in winter presents a dreary barren aspect, which is easily changed and draped with foliage and beauty by the simple planting of evergreen shrubs. Were we to write an entire book in advocating their general use, it would not half express our feelings, or perhaps any more advance their frequent planting than our present few words. To the planter who seeks to create constant

beauty, or who desires easy gradations and harmonious combinations in landscape; to him who has but small grounds in the suburbs of a city; to those who desire to clothe the last resting-place of earthly friends with emblems of eternity and lasting beauty, let me urge upon their attention the claims found in, and beauty derived from, the use of shrub evergreens.

Among the most hardy, and adapted to all sections and positions, the JUNIPER in its varieties is, perhaps, most worthy of frequent and universal planting. There is, as we have described, trees under this head that do not bear clipping; but all the dwarf or naturally small-sized trees of this class bear well a free use of the shears, and may be kept in any form or shape agreeable to the wants or taste of man.

The Swedish juniper—*suecica*—is of a pyramidal habit, with a bluish green foliage and quite rapid growth. It sometimes is liable to break down from our winter snows or severe storms, and should therefore have a wrapping of small wires to

keep it in form. Its growth is from ten to twenty feet high, although it may be kept, by means of clipping, down to a height of only five to eight feet. It is adapted to point groups on the corners of diverging roadways or paths, and with the podocar-

pus and Irish juniper very effective little clusters may be formed.

The Irish juniper—*Hibernica*—forms one of the prettiest of little point trees; it is perfectly hardy, and always keeps a beautiful rich green color, rather darker than



FIG. 59.—*Irish Juniper and Savin.*

the Swedish. It can be kept at any height, from that of two feet upward to five or six. The common juniper—*communis* var. *Canadensis*—is well known, but too rarely planted because it is common. Singly, upon a lawn, it grows rapidly; and although rising but a few feet high, it spreads over

a broad surface and forms a remarkable and effective object. *Juniperus squamata* is also a variety effective as a large spreading plant upon an extensive lawn. *Juniperus nana* and *echiniformis* are of a lighter, more yellow green and compact habit, and for positions where only a limited space



FIG. 60.—*Common Juniper and Prostrate Juniper.*

can be given them, are very beautiful. They are nearer allied to the *juniperus sabina*, or common savin, a variety well known, and that forms one of the best masses of low growth among the whole collection.

The *juniperus prostrata* is a very low creeping variety, of value in rock-work, and for massing and forming a low evergreen bed upon a lawn. It is admirable also for planting on small mounds and in cemeteries over the graves of the departed.

There are many more varieties, but as yet comparatively scarce; all, however, or nearly all, promise to prove hardy and of value in forming features of beauty in a landscape. We have seen a most beautiful mass made of junipers by taking the Swedish as the center plants, then the *canadensis* circling it, and intermingling the *squamata* and *sabina* with here and there a *hibernica*, and toning down with *nana*, to an outside finish with *prostrata*.

DWARF PINES.—There are several varieties of the pine family that are extremely valuable in the formation of groups and masses of low evergreens, among them one under name of *pinus pumilio*, or dwarf mountain pine, is most commonly in use. It is classed by many as identical with *pinus pumilio mughus*, or mugho pine, but the specimens we have had to deal with under the latter name have been of a more compact and diminutive growth, although the leaf and color are the same.

For positions where a compact, round-headed plant from six to twelve feet high is wanted, and for forming a foreground to large masses of round-headed pines, or for use in small yards, the dwarf mountain pine is exceedingly valuable. It is perfectly hardy, of a deep rich green color, and when grown by itself, fully exposed, it forms a very compact small tree. In small pieces of rock-work, and for crowning slight elevations at the turn of roads, etc., we have found its use very effective.

BROAD-LEAVED YEW — *Podocarpus*. — The broad-leaved or long-leaved Japan yew is not hardy in all parts of the Northern and Middle States when fully exposed; but there are many locations in almost every place of any considerable extent where groups of shrub evergreens are wanted, and where considerable shelter may be afforded; in all such, and in some sections, as around New York, southern New Jersey, and on south and west, it is a very desirable variety to plant. The tree is erect, compact, with a rich dark green broad leaf, distinct and beautiful. There

are a number of varieties, but the *japonica* and *taxifolia* are probably the hardiest. Any good loamy soil suits it.

YEW TREE—*Taxus*.—All of the yew family are beautiful plants, and of great value in making up a place. When fully exposed to the sun, they sometimes burn and brown in winter; but wherever they are shaded by having a position on the north side of buildings, the northern slope of a hill, or the north side of a group of large evergreens, they retain their color perfectly. The common English yew—*baccata*—is the one most generally grown. It forms a bush of from six to twelve feet high, and when old enough to fruit, forms one of the most elegant of evergreen shrubs.

The *erecta* is more compact and upright, not as spreading, in its habit; while the *horizontalis* is spreading, almost creeping, in its growth. There are also several varieties with variegated foliage very curious and ornamental. The Irish yew—*Hibernica*—is of slow, compact, upright growth, forming a very small, round, pillar-like tree, but it will not endure any exposure to the winter suns. The American yew—*Canadensis*—is, perhaps, the most hardy of all, but it is not of as rich and dark a green. As a class, however, masses of them are very beautiful; and when azaleas are mingled with them the result is quite satisfactory, especially in spring, when the azaleas are in bloom. In England the yew is used more or less for hedges; but as a hedge plant, except in positions shaded from the mid-day sun, and for the purpose of variety, its use in this country is not advisable.

ASH BERBERRY—*Mahonia*.—Among all the shrub evergreens, the mahonia for general use is, without exception, one of the most valuable. In general appearance of leaf it much resembles the European holly, a plant that is not hardy in the Northern or Middle States; it is of the easiest possible culture, growing freely in any soil not wet. Besides its glossy foliage, in spring



FIG. 61.—Ash Berberry.

it gives a profusion of bright yellow flowers, followed with rich purple berries, making it ever attractive and ornamentally beautiful. Our drawing represents a bush of the variety *aquifolium*, with a cluster of flowers. This is the most common sort, and is, perhaps, the best for masses or low hedges; but where a single plant only is to be grown, we should select the *fascicularis* as being more unique in form of foliage, and more subdued in the tone of color. In fully exposed positions facing south, the mahonia occasionally browns and loses its foliage; but we have never known the plants to kill, and early in spring it puts on new leaves and comes forward rapidly, blooming as if it had suffered no loss.

BOX TREE—*Buxus*.—The common dwarf box—*buxus suffruticosa*—is well known, for it is, perhaps, the very best dwarf edging plant for flower-beds and borders that is known. It should always be transplanted early in the spring, and, by a clipping with shears from year to year, never permitted to grow above six to eight inches in height. The tree box—*buxus sempervirens*—forms a pretty dwarf ornamental tree for decorating small lawns or grass-plots,

or for rounded points of pathways, etc. There are several varieties among them, comprising *latifolia*, or broad-leaved, which is the best; the *mystifolia*, very narrow-leaved; the *aurea*, or golden variegated-leaved; the *argentea*, or silvery variegated-leaved. A sandy or light gravelly soil seems best to suit the wants of the box tree, and a partial shade from southern suns is requisite to enable it to retain its foliage.

EVERGREEN THORN—*Pyracantha*.—The fiery or evergreen thorn—*crataegus pyracantha*—is an evergreen shrub, at present only to be found occasionally in some amateur's grounds, but highly deserving a place everywhere that ornament or beauty is sought to be created.

As a single plant, it has rare attractive features in its clusters of white flowers, blooming in the month of May, followed by round brilliant scarlet berries, that often remain on a great part of winter, and from whence its name of fiery thorn. In forming low-growing hedges, it is one of the very best plants, as it is perfectly hardy, and bears the shears as well as other thorns. Our engraving shows a plant with a few



FIG. 62.—Evergreen Thorn.

clusters of flowers. Any good rich garden soil will answer to grow it.

COTONEASTER.—The cotoneaster is a family of plants that for rock-work and positions where they were not exposed to the south, we have found in use very attractive and effective.

There are three or four varieties, all with white flowers, and all of a low, rather pendant and creeping habit, and their use should be more generally adopted, especially in rock-work, or as undergrowth in shaded situations.

ANDROMEDA.—Two varieties of andromeda, viz.: *floribunda* and *polifolia*, are described by Mr. Fuller in his "Forest Tree Culturist" as worthy of extensive cultivation. They are of slow growth, with lanceolate leaves and white flowers, forming pretty, low shrubs, and suited even to wet soils. We have had no experience with them.

EUONYMUS OR SPINDLE TREE.—This is a class of beautiful evergreen shrubs that prove partially hardy about New York, and are suited for planting in the Southern States; but they can not be depended upon anywhere north.

HOLLY—*Ilex*.—The European holly is so beautiful in England, that almost every

planter of a new place feels anxious to adopt it. Repeated experiments with it, however, compel us to, all unwillingly, write that it can not be used and prove at all satisfactory. Even our native variety, the *ilex opaca*, frequently browns badly, and occasionally loses its foliage completely; and although beautiful when it can be perfectly grown, it proves so often unsightly rather than beautiful, that it is unwise to use it except in shaded situations.

MOUNTAIN LAUREL—*Kalmia*.—The *kalmia*, or laurel as it is commonly called, is one of the finest evergreen under shrubs. It is perfectly hardy in any exposure, but it chooses a soil largely composed of vegetable loam and sand. Near running water it grows and blooms most freely, but naturally it is found often in the most barren rocky situations imaginable. As an under shrub it is particularly desirable, as it bears the drip of other trees without perceptible injury. Its flowers are produced most freely in June, but it continues more or less of bloom for a month or six weeks in succession. The *latifolia*, see engraving, and *augustifolia* and narrow-leaved, or sheep laurel, are the most valued varieties. The flowers of the former are a white or light pink delicately spotted, while those of the sheep laurel are dark red.

FIG. 63.—*Kalmia*.

RHODODENDRON.—The rhododendrons, or rose bay as sometimes called, are a class of broad-leaved evergreen shrubs of exceeding beauty both in foliage and flower. Like the kalmia, they succeed best when grown in soil composed mostly of vegetable



FIG. 64.—*Rhododendron*.

loam and sand, although some cultivators advise free use of well-rotted animal manures. Such application we have found to produce free growth, but at expense of hardihood, and when necessary to improve

the soil, advise fresh woods loam rather than animal manure. The varieties *marimum* and *catarbiense* have been tested as to hardihood all over the Union, and everywhere proved successful. Many others are probably equally hardy when grown under the same circumstances; but a large proportion of those sold from year to year are imported plants, and in getting acclimated too often die. We consider the great secret in growing rhododendrons successfully consists in keeping the soil cool and moist, and this is best done by surface dressing of light half-decayed leaves a depth of three or four inches over the soil in which the roots are growing.

A free use in planting of kalmias and rhododendrons in the small yards and gardens of our suburban residences would give to them a cheerful living brightness in winter, and add largely to their beauty at all seasons.

CNEORUM—*Daphne*.—The garland flower, or trailing *Daphne cneorum*, has been only recently introduced to notice, although an old and well-known plant. For rock-work planting, for points on beds or borders, it is one of the best as well as attractive plants. Its flowers are bright pink, sweet scented, and produced freely in April and May, and again in September.



FRUIT IN VERNON COUNTY, Mo.—This region of country is quite new as yet in respect to fruit culture; but from what is written us by Dr. M. A. Harding and others, we have no doubt of its proving a valuable and profitable fruit-growing section. Dr. Harding writes that "The blush of fruit is deeper here than commonly found in St. Louis County, Mo., and the skin thicker." Why, this latter is beyond our conception! Our correspondent considers this thick skin, or rind as he terms it, a feature of value to them, in that the fruit is less liable to bruise; may be transported longer distances successfully and profita-

bly; and as thus being less liable to decay, gives orchardists, in that section of country, advantages which fully compensate for their distance from that of the consumers of the fruit. Our correspondent accounts for this perfection—thick skin, etc.—of their fruits upon the fact that they have in that climate a dryness of atmosphere greater than any other of the States. Of this we know nothing ourself; but have only to say that if such is the fact, we imagine Vernon County, Mo., will prove one of the best grape-growing counties in the States.

MASSACHUSETTS vs. NEW JERSEY.

BY ROBERT MORRIS COPELAND.

[CONCLUDED.]

IN order to force vegetation successfully, we must have control of heat which can be applied at will to both the roots and the foliage of the plants we are cultivating. This control of heat is acquired in green and hot houses by using fire heat either directly, as when a furnace and its flues warm the building; or indirectly, by steam and hot water conducted about the house in pipes. Flues have many disadvantages: they are very liable to smoke; they always heat the house unequally, overheating the end nearest the furnace, while the other extremity of the house may be cold.

Steam or hot water by its circulation reduces the inequality, the cooling or condensing of the water or steam at the point of the circulation most distant from the boiler making a species of vacuum which is filled by more hot water from the fountain, the cooled portion hastening back to take its place in the boiler, thus keeping up an equable heat in all parts of the house.

To illustrate the advantage which hot-water heat has over manure when applied to hot-beds, I will give the experience of a practical man near Boston, who has, I think, proved that climate and soil are under the control of the will of the cultivator, and that Massachusetts may be a worthy rival to New Jersey in market gardening.

The advantage which fire has over manure has long been known, and made use of, in England; and more than ten years ago I urged the market gardeners, in a book called "*Country Life*," to imitate the European example. In that treatise I gave not only the theory and facts, but plans of advantageous methods of using hot water. But farmers and gardeners are proverbially

slow about making improvements; and only within a few years have the most enterprising begun to change their system.

But to return to my example. Mr. Augustus Calder is the son of a market gardener who lives in West Roxbury, a suburb of Boston, who has cultivated for many years a cold gravelly hillside farm as a market garden. Manure, labor, and hot-beds have induced his unfavorable soil to furnish profitable occupation to father and son.

Wearied with hauling manure, and the constant attention and labor which manure-heated hot-beds require, Mr. Augustus Calder last year determined to try what he could do with fire heat. Against the advice of his friends he abandoned the old frames, and built a simple span-roofed hot-bed, running north and south, out of his hot-bed sashes. He raised the front of the house 1 foot from the ground, and dug a cellar under it 4 feet deep, and made it 10 feet wide. The sashes meet on a simple ridge of plank 6 feet above the walk which occupies the center of the house; the ridge is kept in place by the fixed sashes, every other one being used like a rafter to give strength to the roof. Movable sashes are hinged at their lower end and shut into the ridge, where they are confined by a hook, hasp, and staple; the joints of the fixed sashes are covered by half-round moldings which are attached to the edges of the movable sash. The crack along the ridge is made water-tight in the same way. On each side of the walk, which is 2½ feet wide, are tables 3 feet from the floor and 3½ feet wide; these tables are supported on cedar posts; 1 foot of the upper part of the table being filled when the house is in use, either with earth or pots. This

building, 150 feet long, is heated by hot-water pipes, which carry the water of a small boiler around the house and under the tables, insuring equal temperature in all parts, and giving both bottom and top heat to the growing plants. In such a building there are very obvious advantages. There is plenty of room for the workman to move about; manage his beds; water, weed, transplant, etc. He can transplant in cloudy and bad weather; can raise or lower the temperature at will; can, by the introduction of partitions and an extra pipe, heat one part more than another; can grow a variety of crops at the same time or in sequence, and need only change the soil in his beds once a year.

This experiment was watched with great interest by Mr. Calder's neighbors, who could not believe success could follow such an abandonment of the traditions of the fathers. But success came in the shape of firm, hard, dark-green heads of lettuce before the hot-bed lettuce had begun to make heads at all. His lettuce crop all sold quickly as soon as it was ready for market; and his cucumbers, radishes, and tomatoes carried his profits on to the end of the season.

A particular advantage follows this method of forcing lettuce; in hot-bed lettuce some of the outer leaves are sure to be touched or burned by the hot ammoniacal vapor of the manure; every leaf so injured decays and dies down to the stem; all these rotten leaves must be removed before the head is ready for sale. Of course such a depilatory process reduces the value and hurts the attractive appearance of the head. None of Mr. Calder's heads of lettuce suffered any more than if they were in the open ground, and could be removed directly from the table on which they grew to the barrel for market.

Encouraged by this success, he determined to enlarge the field of his operations by more houses and different crops. During the summer he built three houses, 160 feet long, and of the same general dimen-

sions, in the ridge-and-furrow style, all to be heated by hot water from a single boiler. These houses he has devoted to lettuce, cucumbers, strawberries, and violets, for with the true spirit of the inventor and radical, he decided to add flowers to the crops he had always cultivated, and selected violets for his first experiment.

To give the violets every chance for success, he tried to learn how florists cultivated them. He found the plants were struck from cuttings in the summer, and were wintered in pots or cold frames until February, when they were brought into the green-house and placed near the glass, and exposed to a high degree of heat, the temperature being maintained as high as 70° by day and 50° by night. The soil in the pots and frames was the same as that used for all other green-house plants.

After considering the natural habits of the violet, Mr. Calder decided to follow a different system of treatment. The violet is a spring plant; blossoms most freely before the weather is warm, when the temperature by day is about 60°, and by night about 40°. It seems to prefer rather damp and low places, and to select as soil decaying leaves and carbonaceous matter. Mr. Calder followed nature's method in his treatment. His first experiments were with five kinds of soil. He planted some of his well-rooted cuttings in sand, in loam, in manure, in manure and leaves, and in pure leaves. The leaves were not decomposed, but had been used to bank hot-beds during the winter.

All the violets grew—those in the manure being sickly, while those in the leaves surpassed all their rivals; they made stout, stocky plants, with short dark green leaves, and set a plenty of flower-buds. During their season of growth he frequently lifted the plants to examine their progress, and found the clean white roots had, as it were, sewed masses of leaves together; and when he lifted a violet it would raise by its roots a mass a foot in circumference. Accordingly, when he prepared his tables for win

ter forcing, he covered them with a thick bed of leaves, and no more loam than would fill the space between the plants.

After beginning to force, the thermometer was kept as nearly as possible at a spring temperature—an average of 60° by day

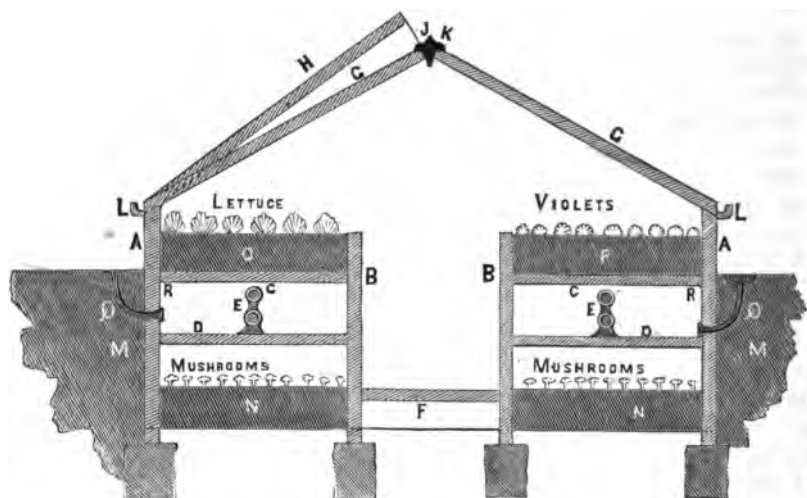


FIG. 65.—Sectional View of Calder's Houses.

- A, A, Outside posts and plank frame.
 B, B, Inside do.
 C, C, Plank bottom of tables.
 D, D, Joists spiked to posts to sustain water-pipes.
 E, E, Water-pipes.
 F, F, Floor of alley.
 G, G, Fixed sashes.
 H, Movable sashes.
 J, J, Ratchet for opening and fastening movable sash at ridge.

- K, Plank ridge with half round molding for stop.
 L, Gutter.
 M, M, Outside earth.
 N, N, Mushroom beds (not in Calder's house).
 O, O, Lettuce beds.
 P, Violet beds.
 Q, Q, Subterranean ventilation (not in Calder's house) to introduce air warm.
 R, R, Air space between tables and walls (not in Calder's house).

and 40° by night; and as a consequence of the moderate heat and good food, the violet houses were purple with blossoms

from the 1st of February. The flowers were engaged by a florist at 1 cent each, more or less; in the week ending Feb. 22,

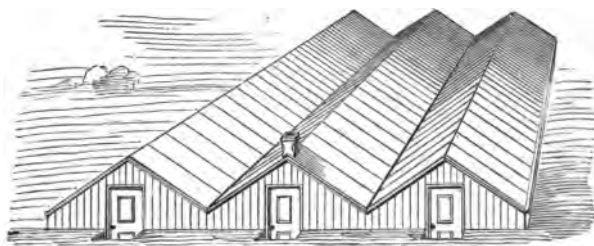


FIG. 66.—Perspective View of Calder's Houses—Hot water, boiler, etc., in end of middle house.

there were 13,000 gathered, without seeming to be missed; on the 28th of February

3,300 were gathered; and yet the following day their places were all filled.

Gardeners who visited these houses during the winter predicted their failure because they were so cold; but the result has proved that cold is better for the violet than heat. But violets have not been allowed to monopolize all the room; the lettuce has been of the best quality, and has sold in barrels readily, to go to New York, at \$1 25 per dozen heads.

Mr. Calder intends to stock his new houses with roses, violets, and carnations, reserving space for salads, strawberries, and cucumbers. He has at present 2,500 pots of *Triomphe de Gand* strawberries, which are beginning to grow, and occupy a part of the space left empty by the marketed lettuce. These strawberries will be kept at a low spring temperature, so as to bring them into bearing about the middle of May. Should they net 25 cents per pot, they will pay all the expenses of his season's experiments, leaving the other crops for profit.

I might have selected some other market gardener florist to illustrate my argument; there are many in the vicinity of New York who are pioneers, and very successful in this kind of culture, but I wished to show that Massachusetts is not debarred by climate from successful market gardening. This sketch shows that the careful and intelligent man may make his own climate and soil, at no very great cost. It is obvious that this kind of forcing is much cheaper than any other. To heat a house 136 feet long and 16 feet wide will require 8 tons of coal for the winter and spring, or \$64. To put 100 feet of hot-beds 6 feet wide into working order would have required 14 cords of manure, which would have cost \$140. The manure, as we have seen, for forcing purposes would have been valueless when once used, and to re-make the beds would have cost another \$140. The

labor of the two fillings and removals would have cost at least \$25, or \$380 against \$64.

Mr. Calder has also shown in strawberry field culture that Massachusetts need not yield the palm to any other State. He has cultivated his strawberries for several years in a peculiar manner: he sets the vines in beds 80 inches wide, the strawberries 10 inches apart in the row, the rows being 10 inches and the beds 18 inches apart. The plants were not allowed to make any runners, all runners being cut off as soon as they appeared, consequently each plant started making five or six heads. When strawberries grow in this single and individual manner, it is easy to keep them free from weeds, with the hoe or the hand; if any grow large, they can be pulled up without fear of unsettling the new runners, which are the staple of most strawberry beds. By giving wide alleys and narrow beds, there is no temptation to the picker to kneel on the bed and crush the ripe or green fruit; and as the plants are all of the same age, the fruit is all of uniform quality from the first picking to the last. From one eighth of an acre cultivated in this manner with strawberries, Mr. Calder sold \$600 worth of fruit, which was equal to the value of the crop which his father gathered from an acre. Without wishing to discourage emigration to the vinelands of any State, may we not reasonably ask all who wish to get their living by cultivating the soil, to first try what careful and well-directed labor will do with the lands where they have their homes at present. If these facts which I have given are of universal application, no New Englander need despair of getting a rich reward from the soil of his native State.

I give a section and birds-eye view of Mr. Calder's hot-beds, to show the method of heating, and their general arrangement.

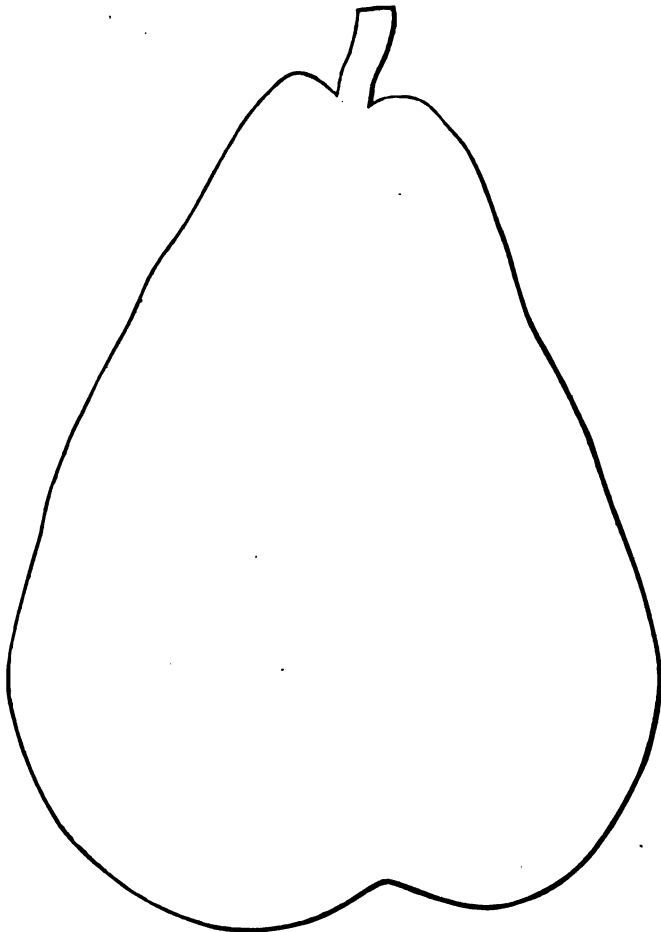
THE SQUASH BUG.—We have saved our melon and squash vines from the injury caused by the squash bug (*coreus tristis*),

12—JUNE.

by covering the vine with earth half an inch to an inch deep all along from the root to the first flowers.

BEURRE DE L'ASSOMPTION.

THIS is one of the new pears described by A. Leroy as of first quality. It is claimed to have originated at Nantes, in France, in 1868. The tree is said to be vigorous, with numerous strong branches, and very productive. Fruit, large, pyriform, slightly obtuse, citron yellow, marbled and dotted with reddish brown; flesh, white, half fine, juicy, melting, vinous sweet, with a delicate perfume. Ripe, last of July and early August. We take the above from the valuable

FIG. 67.—*Beurre de l'Assomption.*

and carefully prepared volume on Pears, by M. Andre Leroy, Angers, France. To our knowledge the variety has not as yet fruited in this country, and may prove some variety already known under another name. If it prove a new sort, with the qualities given it, it will be valuable here for its size and period of ripening.

BALTIMORE GREENING.

LAST autumn we received from John Edgerton, Coal Creek, Iowa, samples of an apple under name of Baltimore Greening. We have no record in fruit books of the variety, nor do we recognize it as identical with any variety under another name. We made the accompanying outline and description of the fruit, and shall be glad to learn more of it.

Fruit, large, globular, flattened, some-

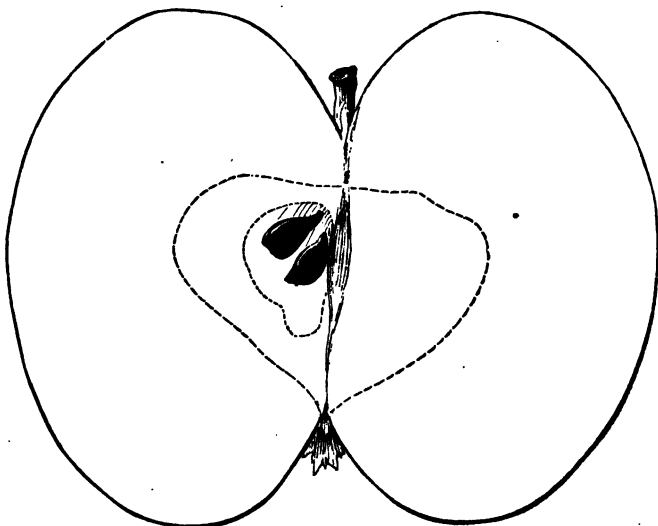


FIG. 68.—*Baltimore Greening.*

what angular, greenish. yellow with a brownish blush cheek in sun—some slight stripes of russet, and a few small but raised gray dots; stem, short; cavity, broad, open, and deep; calyx, closed, or nearly so; basin, open, deep, slightly furrowed next the eye; flesh, yellowish, rather coarse, tender; mild sub-acid; "very good;" core, medium; seeds, broad oval pointed. Season, December.



GATHERING FRUIT.

THE appearance and value of fruit depend very much upon when and how it is gathered. Strawberries, if picked carefully with half or quarter of an inch of the stem attached to each berry, and laid carefully into the basket, will carry better and sell for a greater price than when pulled hap-hazard, some with hulls and

stems on and some with them off. Again, if they are gathered when they are perfectly dry, they will keep longer and retain a better flavor than if gathered while wet. A little water not only hastens decay, but it rapidly destroys the flavor of many delicate, soft varieties. After being gathered, they should never be allowed to

stand out exposed to the sun, as with many varieties it takes but a little while of exposure to hot, clear sun to destroy their brightness of color.

Currants should also be gathered with their stems; they should also be dry, and all leaves thrown out. Gooseberries, if for shipment, should be gathered dry, and a careful expulsion of all leaves will cause them always to command the best price. Like the strawberries, care should always be taken not to expose them to a hot sun after gathering, for such exposure soon gives them the appearance of being half cooked.

Raspberries and blackberries are too often seen in market and on the table half broken and mashed. None but whole and perfect berries should ever go into the box or basket for market. It pays to carefully assort them before sending to market, for the mingling of a few bruised or mashed berries induces decay and detracts from their value in the judgment of the dealer.

Cherries should never be gathered when otherwise than perfectly dry. We have known them to decay entirely in twenty-four hours when gathered while wet. It pays also with cherries for market to carefully sort them over on a table, picking out any mashed or wormy or imperfect fruit before sending to market. Of course the stems are, or always should be, attached, although we have occasionally seen them in market looking more like round cranberries than cherries.

Peaches should be left on the tree until fully ripe, and then gathered carefully with thumb and finger, and at once laid into the basket or box in which they are to be marketed. If the bloom is rubbed off the peach by rough handling, its beauty of appearance is injured, and it will decay much sooner than if untouched. Formerly it was supposed that the peach must be gathered before fully ripe in order to ship it any distance; but practical experience has proven that *ripe* fruit, not quite soft, will carry just as well as unripe, and command a much better price.

Pears and apples should never be picked from the tree by breaking the stems. Unless the stem will separate freely from the tree, the fruit is not ripe; it will neither eat or cook good, and is only fit for those who want a touch of cholera morbus. Apples as soon as gathered may be sent direct to market; but nearly every variety of pear is improved in appearance and quality by keeping in close, dark drawers, wrapped in flannel or soft paper, or packed in bran a few days.

For profit, and in order to obtain the highest price, all fruit pays to be assorted into two or more grades. A few scattering large berries, apples, or pears in a quart or bushel do not assist in advancing the price; but if carefully packed by themselves will bring the highest price, and often induce the dealer to buy the small fruit in order to get the large.

PATENTS IN HORTICULTURE.

BY A. S. FULLER.

IF patents are necessary to protect inventors in other branches of science, why not in horticulture? Are not the fruits of the earth of as much value to mankind as the glittering ornaments which may add splendor, but not one moiety to the real welfare, of the possessor?

We think if there is any branch of national industry which would repay the fostering care of the government more than another, it is that of horticulture and its near relative, agriculture. The progress that we have made in the past half century in agricultural productions has in a great

measure been owing to the protection which patents have afforded to inventors of agricultural implements.

What other great inducement could we offer the inventor to stimulate his genius than that of wealth? Would honor or the gratitude of his fellow-countrymen be equally as potent in developing his inventive powers as money? We think not; for just so long as money remains the great motive power which moves society, just so long must the glittering promise of it be given to individuals for the purpose of bringing out their latent talents.

Secrets in horticulture we have always condemned; perhaps our opinion has been biased by circumstances, from the fact that we never were so fortunate as to meet an individual who happened to possess one, who was not pretty thoroughly ignorant of all other matters relating to the subject.

This, however, is no good reason why there may not be secrets in horticulture, or that a man, otherwise ignorant, may not discover something that would be valuable to the profession.

Steam as a motive power was at one time a secret to all the world except Watts; but when he made the discovery known, others followed in the track, as readily as one wave of the great ocean succeeds another.

Every individual has a natural right to benefits derived from his own labors, and our patent laws were framed for securing this to inventors, while at the same time it encouraged the divulging of secrets. When an article is patented, it is no longer a secret, but the whole world is invited to make improvements upon the same, the original inventor receiving compensation by royalty, or otherwise, upon whatever portion his inventions may contribute to the whole.

We want no secrets in horticulture; but we do require some adequate means of protection to those who may by their individual exertions introduce, invent, or produce any article or process of manufacture

which shall be a benefit to his fellow-beings. Under existing laws, a man who invents a machine or compound to destroy his fellow-man may get the same patented, and derive wealth therefrom; but one who spends a lifetime of toil in discovering or producing a new fruit, grain, or vegetable which shall save nations from famine, or add untold blessings to his race, has no protection against thieves except his own individual strength, which is often quite inadequate for the purpose.

We will suppose a case, and in doing so we will not draw upon our imagination sufficient to exceed the truth.

Mr. A. has been growing seedling grapes for twenty years, but in all that time he has produced but one variety that he thinks worthy of dissemination. This one is a great acquisition, and it will be largely planted; hundreds of vineyardists will get rich from its products; government will receive a large amount, not only from the income tax of those who cultivate it, but from the vine from its fruit; and as a whole, it will add millions to the wealth of the country. At present there is but one vine in existence, and that is in the garden of the originator. Now, it is well known that a variety may be valuable in one locality and not in another, and the question naturally arises: how is Mr. A. to determine the real value of this variety except by dissemination? We all agree that this is his only course; but if he propagates and distributes the vines, what security can he receive that others will not propagate from them? (and perhaps more rapidly than himself) so that while he is waiting to learn the true value of his production, so many thousands of it have been grown by others that he can make nothing by its propagation or sale. In fact, the very means which Mr. A. employs to learn the true value of his new grape has debarred him in a great measure from receiving any reward for his labor.

It may be said that he should have placed the specimens in the hands of only

honest men. True, this would have been a partial protection against fraud; but so long as rascality travels in disguise, and has access to honest men's gardens, this precaution would be of but slight advantage. It is an easy matter for those who feel so disposed, to pocket a few cuttings or seeds of plants, and thereby become possessors, at least, of any new and valuable product of the soil. We could cite many instances, if it were necessary, to prove that many of our horticulturists have been robbed of the reward of their labors by such means; and under existing laws there is no remedy.

The author of a book is protected by copyright, and the compounder of a drug and the inventor of a machine—no matter how simple they may be—receive the fostering care of the government, while the agriculturist or horticulturist is left in a great measure to the mercy of thieves.

We do not wish to advocate the protection of monopolies nor the patenting of every process in horticulture which ignorant or shrewd men may bring forward, but we do want to see some system adopted which shall protect honest men against

rascality, and afford them means of receiving a fair remuneration for their labor. Why can not we have an agricultural bureau at Washington, where new fruits, flowers, or grains may be deposited, with an accurate description of the same?—the depositor furnishing proof that he is the originator, and receiving a certificate therefor, and this shall secure to him the sole right to propagate and sell the article the same for a period of years, as in the case of patents. Perhaps it would be better to have such a bureau connected with each State agricultural college, and in the experimental classes of each the products of the State might be tested, and thereby furnish correct information as to the value of each plant submitted to its care.

It appears to us that some such system is required, and that by its adoption our progress would be more rapid, and that the honest and industrious laborer in the cause would feel encouraged to put forth greater exertions than he does under existing circumstances.

We believe that others feel the necessity of some change in our present system as well as ourselves.

REMINISCENCES—WHAT WE HAVE LEARNED, AND HOW WE LEARNED IT.

A COUNTRY that has passed its novitiate in any great art has good reason to be proud. When this art is at once a blessing and a riches to the individual citizen and the nation, our pride may well be excused by lookers-on. It is not, however, within the rules of either individual or national gratulation that we should refuse to acknowledge our obligations to our elder brethren in the art; nor full of the most high-minded recollections of the aid thus afforded, must we forget that we have learned by mere dint of energy and perseverance more than ever has been taught us by extraneous assistance.

Premising thus much, may we take a glance at the means by which we have achieved so much skill and experience in the ancient art of gardening; while at the same time we have taken up as we journeyed along, a few principles of vegetable physiology, which we are unwilling in our varied practice and extensive reading to set aside. Practice first and theory afterward, is the wise rule of action for all who would make the best use of their brief hour of earthly labor.

We wish to learn something of the laws of vegetation; plant a seed, a bean for instance; cultivate it and study it; follow

the workings of the hand by the reflections of the mind, and nature will teach you her most wonderful lessons; but without the growing plant, how useless the teachings of the learned physiologist! True, science wrapt in its somewhat hidden laws may forget the mere worker in the garden, but the worker many a time and oft reaps harvests unknown to the sage.

Thus have the pioneers in this grand field of beauty taught themselves the art which their children have so far developed, and it is now but the appointed time when the way through the desert begins to be made clear; when the rose amplified by art is planted by the side of the wild one of the prairie, and both are acknowledged by the eye of taste to be alike beautiful, for are not both products of nature's storehouse, variously manipulated by the genius of man?

Our art is eminently a peaceful art, for while each in the rude manner in which he has been instructed by corrupted custom, endeavors to bring to the common treasury his humble gifts, so his brother worker, imagining his achievements to be more worthy, but follows in his emulation the principle of aiming at perfection without the lesson of humility, so necessary as its counterpoise.

It was thus in the early days of our American horticultural novitiate, that every worker emulated the zeal of his neighbor, and the results though occasionally a little discourteous, were soon adjusted.

In the midst of this Babel of landscape gardeners and garden architects from every corner of the civilized world, we had a merry time. The ax was heard at every step, and the grand trunk of each prostrated giant sent a knell to the heart of the true lover of arboricultural grandeur and beauty; but on this spot were to be raised new offerings to Flora. Here were to be reared the denizens of other climes, for had not our

Bartram been trading in our trees and plants, gaining in exchange new forms, unknown to us, the types of a vegetation destined one day to be as familiar to our children as our commonest trees are to us? So that we permitted the forest to be laid waste, and on the ruins of cedars and tulip trees and persimmons we planted the less sturdy growths of a much less severe climate. In the effort to obtain these stranger forms of tree, and shrub, and plant, what a world of that enthusiasm which still lives, but has well nigh culminated; in the history of its earnest promoters we read the lives of the honored dead who have left their monument in an enriched and varied artificial landscape.

The year in which the *HORTICULTURIST* took its place among the aids of the new school of gardeners was over one hundred years later than the date of the introduction of our hemlock spruce to English gardens by Peter Collinson, and in that century of active experiment and research, what wonders were accomplished. Wonders, indeed! when we reflect on the means of intercourse between the old garden and the new, when we calculate the world of trouble and anxiety requisite for an interchange of trees and plants at that distant day.

Such a romance is furnished us in the graphic memoirs of the Bartrams and their correspondents; and should not your young readers have resolved to read of nothing but "new grapes" and "wine-making," just recommend them to take a hasty glance at "Bartram's Memoirs," by Darlington, a worthy memorial left by the modest author of the "*Flora Cestrica*" to a still more worthy arboriculturist.

Have we now in the year 1868 any authentic available history of the successive stages of progress through which we passed toward our present position? Is such a narrative worth the time and pains it would demand? If so, let it be forthcoming.

D. S.

SCRAPS FROM MY NOTE BOOK.

WHITEWASHING TREES.—I often see this advised, and some of my neighbors adopt the advice, making their orchards and trees around their house good representations of tombstones in a cemetery. As the object of using whitewash or alkali upon the bodies of trees is to destroy any insect life that may have collected or attached itself thereto, and as weak lye is equally or more effectual than whitewash, and less glaring and offensive to the eye, I see no reason why editors of journals should ever permit the issue of advice to use whitewash without a word of comment. Possibly they may be jealous of their country friends, and thus advise them to destroy Nature's own coat and make the appearance as artificial and absurd as their own town views.

STRAWBERRIES.—Oh, what a bother! I have now about sixty varieties, over which I am daily looking for the superior excellence said by the originators to be wrapped therein, according to name. Among all the sorts, Wilson is the first to bloom; and I have always been able to gather a little fruit from it as early as from the earliest sorts; but its main crop of course we all know is not of the earliest. I do hope the next meeting of the American Pomological Society will weed out the "suckers" from this class of fruit.

ASTRACHAN CRAB APPLE.—Some years since I had a variety of the Siberian Crab under the above name. It was a half larger than the Large Red Siberian—so say my notes—"of a bright, rich red, very showy and beautiful." I have lost it, and would like again to possess it, if any reader of the *HORTICULTURIST* has it.

HONEY PEACH.—A nice little fruit that should be in every amateur's garden, and especially in orchard houses. I believe it was originally grown by Charles Downing from a seed received from China.

DANDELION.—Although a common weed,

and therefore disliked, yet a mass of dandelions, when in bloom early in May, presents one of the most gay and rich golden shows possible to be created. With a little care, to prevent them from going to seed, a bed may be kept within bounds, as I happen to know; and no plant that we have will at the same season, and with the same amount of labor and care, present a more gorgeous display of flowers.

ROADSIDES.—Riding along in the country to-day I passed a number of places where new houses were just built, and evidently the owners were disposed to make their places "look smart." In so doing they had pruned away waste branches from the trees, thinned out the shrubs, and raked off all the stones and sticks; but where do you think they put them? I presume you will say in a brush pile back in the lot to be burned. No such thing. They were all thrown into the street to annoy every passer-by, and in full view of themselves and every one. Like the girl who combed her hair in front and neglected the back of her head, under the impression that no one saw her except as she saw them, face to face, so they forgot there was any view of their places except within their door yard fence lines. If there is any reader of these notes following this practice, I hope they will abandon it.

SCUPPERNON GRAPES.—I have a vine growing on a large ailanthus, where I think the variety may answer, being about as valuable as a grape as the ailanthus is as a shade tree.

NEW-MOWN GRASS FOR MULCHING.—Nothing that I have ever used equals new-mown grass for mulching newly planted trees or for placing among strawberry vines. It keeps its place, is clean and neat, leaves no seeds, and creates no fungi, as is often the case with old tan bark or rotten wood.

E.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

THE AGRICULTURAL DEPARTMENT AT WASHINGTON.—We are indebted to the Commissioner of Agriculture for copies showing some of the acts which that department has endeavored to perform, for which he will please accept our thanks.

The Commissioner is under the impression that because the speakers at pomological meetings do not agree as to the merits of particular fruits, the recommendation we made to have new varieties examined in the grounds of their grower or originator by a competent committee made up from well-known experienced pomologists, can not be done, because it would perhaps give to the department a too dictatorial course. We confess we do not see it in that light, because our knowledge of the judgment of *pomologists* as to *quality* of fruits we find generally uniform, and a report made by such committee on the quality, and at the same time general appearance of tree or plant as seen in the place of its origin, would have weight all over the country, and be duly regarded as the committee's opinion, not the department's. The Commissioner, however, would have one task to perform which he perhaps sees would be extremely difficult, and that is to name and make up the committee from the best talent without being compelled to work in one, two, or more of men who, having sold a few trees, or wrote a few articles for some newspaper, set themselves up as pomologists, and are anxious to bolster themselves before the public by association. If the Commissioner is going to wait until "pomological conventions and local societies agree" after discussion on the merits of varieties, he will

have a good time of rest, because it is well known the discussions of pomological and local societies are participated in by the inexperienced as well as the experienced, all free and open, and just so long, of course, the words of the man who has perhaps never seen but a dozen varieties of fruit, and those during the past half-dozen years, will be placed on record just as prominently as those of the man who has devoted a whole lifetime to the study and observation of fruits. The public do not always know how to discriminate in these speakers, but the Commissioner should, and so seeing, be enabled to see that real pomologists differ very little as to quality and values of fruits. But while we have this point of checking the introduction of unworthy new seedlings in view, we shall not urge it as yet too strongly, nor shall we omit a knowledge that the Commissioner is evidently disposed to advance the interests of our country in its agriculture and horticulture, as seen in his desire to have the duty on seeds, stock, etc., for propagation, rescinded, in his abolishment of waste of money distributing old and common varieties of seeds or plants, and in many other ways not necessary here to record.

In a circular to State Boards of Agriculture, etc., we notice a request for "aid to the propagating garden at Washington for testing the merits of new seedling fruits." So far as any test made there of the identity or correctness of a variety is made a point, it may be useful to the public; but so far as a test in that garden is made, as respects its value in other sections of the States, it is worth nothing;

and the record of capable men elsewhere growing the same things is just as valuable as the record of the garden superintendent.

It is only a private garden of local influence in reality, and the public generally know it. Give the gardener a duty to perform in collecting one of everything, tree and plant, under whatever name, grow and compare them, and arrange them their true names and their synonyms, and he will be doing good for the whole country; but a test of the value of a fruit or grain, or the hardihood and beauty of a tree, shrub, or flower, at Washington, is not worth a farthing to ninety per cent. of our territory.

NORTH CAROLINA SEEDLING GRAPE.—J. L. This is a hardy sort, as yet little known north of Missouri. It has a large, well-formed bunch, with large-sized black berries, of rather a harsh quality, showy, but not particularly good to eat. It ripens same time as Concord, but we do not think will prove valuable here at the East or North.

MESSRS. B. K. BLISS & SON, 41 Park Row, New York, have on exhibition at their store a fine collection of cones collected by an amateur botanist from the coniferæ of California. They comprise many species, and are probably the best collection ever brought to the East. Any of our readers who are interested in the giant productions of the Golden State would do well to examine this collection, many of the cones being fine cabinet specimens obtained at the cost of much time and labor.

REFRIGERATORS.—The warm season brings with it a desire for the means of preserving meat, vegetables, fruits, etc., from rapid deterioration. Numerous refrigerators have been manufactured and offered to the public, and many of them have partially answered the purpose intended, but at a large expenditure of ice. Lately, A. M. Lesley, of 605 Sixth Avenue, New York, has devised one, which, after a

careful trial, we pronounce to be the best contrivance we have seen for the purpose intended. It is neat in appearance, substantial in construction, economical in the consumption of ice, and what is so necessary to the proper preservation of articles of food—keeps the interior atmosphere dry.

ABOUT INQUIRIES AND ANSWERS.—EDITOR HORTICULTURIST: I often read in your journal and others interesting articles by correspondents, but which lack much of the interest they should have, by not giving the residence or location of the author—for instance, "An Hour at Home," by John S. Reid, referring to success and failure of various grapes; "The Opinions of My Neighbors," by F. Amon, referring to many varieties of fruits.

Also, when inquiries are answered by the editor in a journal, and the *inquiry* not stated, the general reader is not, in most cases, informed by the answer.

I have for many years noticed the omissions referred to, and thought them quite important.—Very respectfully, a subscriber from 1846,

T. G. YEOMANS.

[The above from an old subscriber and a practically successful fruit-grower touches a point we have ourselves often desired to cover, but there are two or three things in the way to so doing. First—Some who ask questions and desire them to be answered, write at the same time desiring not to have their name appear; and while we endeavor to reply to all such personally by letter, occasionally a question comes which we deem pertinent to answer in our columns. Our readers, however, we think, will hold us blameless of copying "Idem," etc., from English journals and sending them out as original.

Second—There is with many an impression that whoever writes his views of the value of fruits or flowers for publication is public property, and therefore they can address him for all sorts of inquiries free of cost. This is a growing error, and should be checked, because it deters many

a capable man from offering his name and character to the public. We have before us now a letter from one of our correspondents saying that he "has at one mail received seven letters asking for lists, and information of where to obtain, etc.," one man even asking for "a complete record of all the best of apples, and especially for those suited to Tennessee."

All such inquiries, we think, should be addressed to the editor of the journal from whence they have sprung, and he will see to their being answered; or letters may be addressed to writers and sent to the care of the editor of the journal in which their articles appeared, when they will of course be duly forwarded.]

MONMOUTH, April 14, 1868.

MR. EDITOR—*Dear Sir*: I feel inclined to say a few words to some of the contributors to the columns of the *HORTICULTURIST*, and to request them to be a little more specific in their descriptions of certain processes which they describe. For instance, at the meeting of the Lake Shore Grape-Growers' Society, as given in a late number of the *HORTICULTURIST*, it is said: "Mr. Saxton had kept his grapes in a cool room—in a dry cellar," etc. They kept well, and would have kept until April.

Now, the way to do this is what I greatly desire to know. But he has given us no directions about packing them, or how to protect them from freezing in a cold room in winter. From all that is said on the subject by the different members of the Society, I am unable to understand how to do it. I confess I am a novice in the business, and I read the papers and periodicals to learn how to do properly everything connected with grape-growing. And when I read the communications of men who know all about it, and they fail to give all the manipulations necessary to success by a beginner, I feel disappointed, and throw down the paper with disgust. A year or so ago, Mr. Griffith, of Penn., told us of his wonderful success in grow-

ing the Delaware and other hard-wooded grapevines in the open air; but he failed to tell us how to do it. What benefit is it to the common, unlearned readers of your excellent paper to read of the great success of scientific men in fruit-growing, if they do not tell us common people how to do it? It is like presenting a loaf of bread to a starving man, yet placing it beyond his reach. I am delighted with the *HORTICULTURIST*, and with a little reform in the direction indicated above, my joy will be full. J. F.

PLANTING ROSES.—It may seem out of season to write of planting roses in June, but our experience in forming a bed of roses leads us to consider this month quite as desirable as any. Formerly, only the tender roses were grown in pots; and if hybrid perpetuals were wanted, it was necessary to procure them early in spring or in the autumn. Now, however, the large rose-growers keep a stock of all sorts grown in pots; and we have found that when planted out in this month, they grow vigorously from the first, and bloom well late into autumn.

The soil should be dug deep, say eighteen to twenty inches, and well intermixed with good rotten manure. Turf and bones are also good manure for roses. When the plants are turned out of the pots, if they are worked on manetti or any other roots, all suckers or sucker buds should be rubbed off, the drainage just removed; but otherwise the ball should be disturbed as little as possible, although when the earth has been pressed well to it, a slight pressure near the collar may be given just to insure the water passing through the fibers. After a good soaking of water, the ground around newly planted roses at this time should be well mulched, and for this purpose new-mown grass is one of the best materials. A watering of liquid manure once a week will cause the plants to make strong and healthy growth and produce abundant blooms.

REARING CHICKENS.—A writer in the *London Cottage Gardener* gives the following excellent directions for rearing chickens, translated from M. Jacque's French work, "Le Poulailier."

When a hen takes to her nest she is the same evening removed from the yard to a (sitting) room, into which only a half light is admitted, and there kept on dummies for a few days until two or three hens are broody. I prefer three or more to two. They are placed in separate covered hampers 2 feet long and 1½ foot wide, in which clean new hay has been spread. Each basket has attached to it a linen label bearing the date of sitting, the name of the hen, the number of eggs, with the date upon which chickens are due, thus—

Betsy.—February 29. 14 Houdans, Due March 20.

also a clean piece of old flannel.

Every morning at the same hour each basket is opened in turn, the hen taken out and placed under a coop, being previously supplied abundantly with food, both soft and grain, and with clean water. Fifteen minutes, neither more nor less, are allowed for feeding. While the hen is off the nest the eggs should be kept covered with the piece of flannel, and having put all the sitting hens to feed, each nest should be visited in turn to ascertain that no casualties have occurred; and if any eggs have been broken, turn the rest out, put in clean hay, and cover up again as quickly as possible.

On the sixth day the hens should have an extra ten minutes allowed them, and should be given an opportunity of dusting themselves while the eggs are being examined for chickens, which is done by inclosing a lighted paraffine lamp in a box, in one side of which a hole about the size of an egg has been made. To this hole each egg is applied in turn, and returned to the nest or rejected, as it proves to be

barren or otherwise. This should be done in a dark room. When a great proportion of the eggs turn out barren, a complete sitting should be made up to one or two of the hens, and the rest kept upon dummies for a few days till a fresh set of hens is ready; hence the greater the number of hens put to sit on a given day the greater the convenience.

On the twenty-second day the baskets containing the hens and chickens are brought to the light, the chickens reckoned, and regularly distributed between the hens. Some bread crumbs for the chickens, and grain for the hen, are put in a saucer at one end of the basket, and the whole taken back to the half light till the twenty-third day, when they may be turned out where it is intended to rear them.

The above directions may seem complicated and unnecessary, but in practice will be found to facilitate the work, prevent many mishaps, and, consequently, increase the percentage of chickens, while the mothers will turn out with their broods much less exhausted, and consequently better fitted to take care of them, than if left to sit closely for several days, as many, and those the best sitters, frequently do, and then get up and stay off the nest for half an hour or an hour, which, if it happen to be a cold day, may spoil the eggs or make the chickens weakly.

HARDY SHRUBS are readily propagated from cuttings of the present year's growth of wood. Plant them in a cold frame, and shade them the same as herbaceous cuttings.

BEDDING PLANTS require special attention to pinching and pegging, for on this depends greatly the beauty of display as the plants come into bloom.

EARLY in June is a good time to sow annuals for fall blooming. Sown at this time they frequently do better than those sown earlier, because the ground being warm they grow right along without check.

EAST BETHLEHEM, PENN., May 5th, 1868.

F. W. WOODWARD, Esq.—*Dear Sir*: Have you any experience in covering strawberries during winter with sorghum bagasse as winter protection? Or have you any letters from correspondents who have used it for this purpose? There is a large quantity of it here (in a heap) one and two years old, and I had thought of procuring it for this purpose, and spread it out into small heaps this spring, and turning it over once or twice during the summer to have it all exposed to the rains and action of the weather before putting it on the plants in December. It would not do, in my opinion, to put it on more than half an inch deep, as one inch would surely smother the plants. We can not use straw or fodder or stalks here as a covering on account of the field-mice working under them; but they rarely work under the bagasse. I have never found anything that would retain moisture like it; hence, if it is not injurious, it would be just the thing as a summer mulch. In the spring it could be moved from off the crown just as straw is done. What think you?

Yours, etc., JNO. H. JENKINS.

[We have witnessed the use of bagasse during the past two years on strawberries and among raspberries, etc. It packs very closely and retains moisture, and unless put on too thick answers well. There is an acid in it, but unless, as above said, it is spread thick, we can see no injury from its use. We should not advise its application until just before the strawberries commence to ripen, and then we would remove it early in September, and replace after the ground was thoroughly frozen, again removing it in spring from the opening thereof, until near fruiting time.]

TREE PEONIES.—We have repeatedly written of the wealth and beauty of leaves and flowers possessed by Moutan or tree peonies, and we now again desire to call the attention of every lover of flowers to an examination of their foliage and blossoms.

We have found them to be perfectly hardy, and now that a variety of shades of color have been produced by new seedlings, a bed of them when in flower presents one of the grandest sights we have ever seen created by grouping or massing of flowering shrubs.

GORDON'S FLOWERING CURRANT—*Ribes Gordoniani*—is one of the prettiest and most showy of our very early and hardy shrubs. Its blossoms have been beautiful with us this year. It should be annually pruned back as soon as it has done blooming, otherwise it will soon grow out of shape; and besides by annual cutting back, it grows more vigorously; and as its flowers are all on the wood of the previous year's growth, the bloom is consequently more abundant.

NUMBER OF VARIETIES OF SMALL FRUITS NAMED AND DESCRIBED.—A glance which we have given at the number of varieties of small fruits now known, named, and described, counts up over *three hundred* of strawberries, about fifty currants, seventy raspberries, twenty blackberries, and nine of American gooseberries. The list of English gooseberries is almost beyond computation, and nearly all are valueless in this country.

GRASS LAWNS, newly made, must not be so closely mown as old turf; but mowing must be performed with regularity, or it is impossible to obtain a uniform velvety green surface. To mow close a well-established turf is to encourage the fine grasses and kill out the coarse kinds. Salt and plaster are good manures to sow at this time. Use at the rate of one bushel of plaster and three bushels of salt to the acre, and sow just before a rain.

INCREASING THE SIZE OF FRUIT.—While the fruit is swelling, the size of raspberries and strawberries may be increased by thinning out the number on a cane or plant, removing all suckers or newly-forming attached plants, and watering occasionally with manure water.

HOE WITH THE RAKE.—This may be an Irishman's advice; but we have found great advantage in the use of an iron tooth rake or toothed hoe during the early cultivation of all garden crops. We go over our beets, parsneps, peas, beans, etc., with a twelve-tooth steel rake as soon as they show sign of coming above ground. For potatoes, corn, and for working among raspberries and other small fruits, and for stirring the surface earth around dwarf pears and recently planted trees, we use a four-pronged hook or hoe, with which a man will perform nearly or quite one sixth more work in a day, destroy the weeds, and leave the ground always light, loose, and even.

KEEP THE SURFACE OF THE GROUND LOOSE.—We have many years watched the varied results of the cultivator who keeps frequently stirring the surface of his soil, and the one who hoes or cultivates only when the weeds compel him to the work; and as we have watched and recorded our notes, the result has always been in favor of the constant stirring of the surface soil. We do not advocate deep tillage during the growing season, but we would have the ground deeply and thoroughly stirred early in the season, whether it were an old or new plantation. Once, however, that vigorous growth of top and root has commenced, all deep tillage should cease, because, by pursuing it, constant and continued checks are given, and a truly healthy growth prevented by repeated breaking and tearing asunder the roots and fibers, the supplying pipes for elongation, expansion, and evaporation of the branches and leaves. By repeated surface stirring of the soil, however, no roots are broken; the sun, air, and moisture are enabled to penetrate and assist in the chemical transmutation of the earth's compounds and fitting them for absorption by the roots.

SAW-TOOTH CULTIVATOR.—One of our correspondents writes, he is having a cultivator made, with the edge of the teeth

made notched like the teeth or knives of a mowing machine, except that they are sharpened all from the under side. By this, he says, he feels confident he can always be sure of cutting all the weeds without regard to their size, an item that ordinary cultivators fail to perform.

EXPERIMENT IN WINE-MAKING.—Capt. John Spalding, near Cleveland, O., sends us two bottles of wine made from the refuse grapes of his nine acres of vineyard last fall. His course was to mash the grapes and leave them about twenty-four hours on the skins; then, after testing the weight of the must, he added grape sugar dissolved sufficient to bring up the saccharometer test to 90°, and then let the whole ferment a day or two on the skins; after which it was pressed and put into the cask, and is now a dark-colored, heavy-bodied liquid, without much of the grape aroma, and with considerable harshness, but yet far superior to many of the so-called wines sold. An experiment was made with some of the wine by bottling it, and then putting the bottles into water and gradually bringing the heat up to, "he says," 180°, and then corking tight. The wine so heated is more mild, but has a dead character, without any decided flavor, which *we* do not like, but may possibly by some be admired. It will doubtless keep longer than that in which the qualities of the grape are yet more distinct; but at the expiration of time, say two years, we do not think it will be as good.

ASPARAGUS should not be cut too late in the season, or its value another year will be lessened. A dressing of well-rotted manure lightly forked in should now be given the bed.

BUSH AND PYRAMID TREES, under the common name of dwarfs, should be carefully watched and pinched back from time to time, if any special form is desired to be retained.

IMPROVEMENT OF PUBLIC STREETS.—The correct arrangement of the suburban streets of our large cities, as well as those of country villages, appears to us as demanding more of thought and attention than has thus far been devoted to it. As a rule, no definite line has ever been marked on the first opening of a street or road, except, possibly, that of the civil engineer to designate the line of drainage according to the elevation. No thought has been taken as to just how much breadth of road was actually necessary to accommodate the public travel, or how the depression or elevation of the road-bed would tend to improve or deteriorate the value of the abutting property. Street trees are yearly planted, but with little thought of the best position for their permanent results in giving shade to the traveler, character to the street, and harmony of association with the grounds or lots adjoining. At the suggestion of one of our subscribers we shall endeavor to give this subject a careful examination during our visits to different cities and towns this coming summer, and publish our views thereon in the autumn. Meantime, we shall be much obliged for any suggestions from private parties, and would ask of our editors of papers devoted to the improvement of all matters of rural life, to bring up the subject to their readers and ask for suggestions. Some of the points we desire to have more carefully observed in establishing the grade, etc., of a street, are: first, the width that is necessary for a road-bed for carriage travel; second, the elevation of that road-bed as connected with the natural grade of the land adjoining the road; third, the distance at which shade trees should stand from the boundary side of the street and also from each other.

KIRKWOOD, Mo., May 11, 1882.

MR. EDITOR: Advertisements of poultry, especially of Brahmas, often mention "pea comb" as a desirable form for the crest of that variety of fowls.

I have been frequently asked, "What is the difference between pea combs and rose combs?" I confess my inability to give a satisfactory reply.

A short paragraph defining the precise meaning of these terms and describing the forms of "pea" and "rose" combs would no doubt contain information which would be valuable to many of your readers.

C. W. S.

Answer.—Pea comb—low in front and firm on the head, without falling over to either side, distinctly divided so as to have the appearance of three small combs joined together in the lower part and back, the largest in the middle, each part slightly serrated. Rose or double comb—square in front, fitting close and straight on the head, without inclining to either side, no hollow in the center, uniform on each side, the top covered over with small points, with a prominent point behind.

GREENHOUSE AND CONSERVATORY PLANTS that require to be placed out in the open air to complete their growth and ripen their wood, may often be made to highly decorate some bank, corner, or odd place about the premises, instead of hiding them away back of the sheds or outhouses.

TOMATOES will bear more abundantly, and occasion the least trouble, if the ends of the shoots, just beyond the fruit, are pinched off. A surface mulch of rotten manure, and if a dry time, frequent watering, well repay in increased size and abundance of fruit.

HERBACEOUS PLANTS, as soon as they have done flowering, may be easily propagated by cuttings. These should be planted in a cold frame in a mixture of sand and loam, and kept shaded until roots have formed.

FUCHSIAS should be shaded from the mid-day sun. It is a good time now to make cuttings and propagate.

TRANSPLANTING of annuals, tomatoes, cabbage, etc., should never be done when the ground is wet. It is also a bad practice to puddle the roots, that is, to wet and so mud the roots by dipping them in a pail of mud as to cause them to adhere together. Our most successful practice in transplanting is to plant in the dry ground, when the earth pulverizes fine like meal; sift the earth among the roots until the hole is half filled with earth; then fill the hole with water, and as soon as it has soaked away, draw in dry soil to finish and level the surface.

BOOK NOTICES.

DARWIN'S GREAT WORK.—*The Variation of Animals and Plants Under Domestication.* By Charles Darwin. Authorized edition, with a Preface to the American edition by the Author, and one by Professor Asa Gray, of Cambridge, Mass. New York: Orange Judd & Co.

This is the republication of an English edition of a work the value whereof it is difficult to estimate in words sufficiently expressive.

The first English edition, it is said, was exhausted in a week, and the publishers of this, awake to the wants of the American people, secured the author's revision, with new and additional notes, making it the most complete as well as the most remarkable collection of facts concerning our domestic animals and plants yet brought together. Written in admirable English, using no scientific terms but such as are comprehensible to men of fair education, lucidly arranged, and indexed with scrupulous care, there is not an agriculturist or horticulturist in the country who has any taste for the history or theory of his calling but will peruse it with pleasure and profit, and find it difficult to say whether he values it more as a storehouse of facts or as an incitement to observe and to think.

Let the reader be of the learned professions, or a child or novice in all that pertains to natural history, they will find

in this book food for thought and instruction, knowledge of animal and vegetable life, their origin and perpetuation in a healthy or unhealthy condition, and so mingled with anecdotes, observations, and originality, that its study will be a pleasure to every intelligent mind.

The work is finely illustrated, and published in two volumes of over 500 pages each. Price, \$6.

THE BOOK OF EVERGREENS. A Practical Treatise on the Coniferae, or Cone-bearing Plants. By Josiah Hoopes.

Messrs. Orange Judd & Co., publishers, Broadway, New York, have just issued a book with the above title, which we take great pleasure in commending as the labor of a scientific and practical cultivator.

The subject is one of interest to all classes, inasmuch as evergreens play a very important part in the decoration of our homes and in the shielding of them, as well as our orchards, from harsh, cold winds and storms. In both popular and scientific language the author describes the many species, and treats practically of their propagation, their hardihood, etc., in such a manner as can not fail to make the work a necessity to every planter. Botanically, we have long felt the want of just such a work as is here presented, and are thankful to the author for the care he has evidently taken in striving to arrive at correct names. The book is gotten up in the usual good style of its publishers; is abundantly illustrated with engravings, executed in a very superior manner, and can not fail to take its appropriate place as a standard of authority on evergreens for this country. Price, \$3.

ACKNOWLEDGMENTS.

Our thanks are due to John Saul, Esq., of Washington, D. C., for a fine collection of the newer varieties of geraniums, fuchsias, chrysanthemums, etc., all in fine condition.

Also to Peter Henderson, Esq., of 67 Nassau Street, for like favors.

THE HORTICULTURIST.

VOL. XXIII.....JULY, 1868.....NO. CCLXV.

CULTURE OF THE VINE IN EUROPE.

THE United States Commission at the Universal Exposition of Paris in 1867 appointed a committee, composed of Marshall P. Wilder, Alexander Thompson, William J. Flagg, and Patrick Barry, to report on the culture and products of the vine. The report is given in the monthly publication of the Department of Agriculture, but with some typographical errors corrected we give the report almost entire, as we consider it of great value. Although the committee embraced four members, we believe the main credit of attending to the interests of our country on this subject is due to Messrs. Wilder and Barry, whose knowledge of the great interest felt by our people in the culture of the grape induced them to make extra exertions and obtain a *special* committee for examination and comparison of our American products with those of other countries.

"The exhibition of wines at the Universal Exposition of 1867 was large. Every wine-growing country of Europe, as well as Australia, Canada, California, and other sections of North and South America, were represented. As there were no jurors from the United States, our American wines were not subjected to so full and

fair an examination as they were entitled to, and to remedy this omission a special committee, consisting of the undersigned, was appointed by the Board of Commissioners to make an examination of the wines of our own and other countries, and to report especially with reference to wine-making in America.

"As regards French wines, full reliance can not be placed on what is furnished to the American traveler at hotels or cafés, or even what is sold him at the shops, no matter what price he pays. It would, however, be doing French wines a great injustice to judge them by the qualities sold in this way, or exported to America. The great body of American consumers have palates as yet so unskilled, and the merchants of Bordeaux, and fabricators and imitators are so adroit, that it seems impossible for the honest wine maker here to come into such relations with the wine drinkers there as shall secure to the latter the benefits, sanitary and moral, which the French people themselves derive from the pure juice of the grape so abundantly produced in this country. It is not an unusual practice for dealers to buy of producers in the back country a coarse, deep red wine for 30 cents per gal-

lon, and a strong white wine for 45 cents per gallon, mix and bottle them, and send them abroad labeled with all the high-sounding names of 'Medoc,' to sell at enormous profits to unsuspecting foreigners.

"Farther south than Bordeaux, in the country about Montpellier and Bezires, an inferior article, but perfectly pure, can be obtained of the producer at five and six cents per gallon, or one cent per bottle. Of late years, and since the abatement of the grape disease, the production of France has been very large, the 4,000,000 of acres in cultivation yielding an average of 1,200,000,000 of gallons, which would give to every man, woman, and child in the country a half bottle-full every day, even after allowing 200,000,000 of gallons for exportation.

"Hungary, whose product is second to that of France only, can supply a wide range of varieties, and at prices extremely reasonable. As the Hungarian producers seem to know, as yet, but little of chemistry, we suppose their wines to be generally pure.

"Besides the sherry, of which we consume so largely, Spain has an abundant and rich vintage with which American consumers would be better acquainted if her merchants had more of the enterprise of those of Bordeaux.

"Portugal also produces plenty of excellent and pure wines of which we know little, for hardly a drop is allowed to leave the country without being so strongly brandied as to lose its character as a wine, and become rather a spirituous liquor. Port wine is repeatedly dosed with spirits until it contains at least as much as 24 per cent. of alcohol. Fifteen years' age is required before it is fit to drink, not because the wine is slow to ripen, but because the spirit needs to remain fifteen years before the disturbance it causes can subside, and the antagonistic ingredients of the mixture harmonize.

"Notwithstanding bold and persistent assertions to the contrary, it has been satis-

factorily proven to your committee that the adulteration is made, not to preserve the wine, but solely to make it sweet and stimulating.

"As America is destined to become a great wine-producing country, her people ought to be better acquainted than they are with the higher grades of foreign wines, but they have as yet drunk so little of these, that their standard of excellence remains comparatively low. Now, except in California, none of the European vines will grow in America, and we are compelled to search in our forests, and develop in nurseries and vineyards the varieties which are in the future to be our reliance for competing with foreign producers, and finally, it is to be hoped, emancipating ourselves from them altogether. Of course, then, the higher our standard of taste is, that is, the higher our aim, the better will be our success.

"Our American vineyards compare very well with those of France, and so do our cellars, presses, and casks.

"SOIL AND EXPOSURE.

"The soil of Medoc, where stand 'Chateau Margaux,' 'Chateau La Fitte,' and 'Chateau La Tour,' is a bed of coarse gravel, among whose pebbles the eye can barely detect soil enough to support the lowest form of vegetable life. In the vicinity of Bezires, on the other hand, the land is rich and strong enough to yield any kind of a crop; yet Medoc grows wine that often sells for ten dollars per gallon, while that of Bezires sometimes sells for less than ten cents per gallon. In Burgundy there is a long hill on whose dark red ferruginous limestone sides a wretched thin covering of earth lies, like the coat of a beggar, revealing, not hiding, the nakedness beneath. Here stand little starveling vines, very slender and very low; yet here is the celebrated 'Clos Vaugeois,' and this is the hill, and these are the vines that yield a wine rivaling in excellence and value that of Medoc, and

to the fortunate proprietor the *Côte d'or* is what it signifies, 'a hillside of gold.' At its base spreads out a wide and very fertile plain, covered with luxuriant vines, whose juice sells from ten to twenty cents per gallon.

"If you go farther northward and examine the hills of Champagne, you will find them to be merely hills of chalk; and these instances only illustrate the rule derived not from them alone, but abundance of others, that, for good wine, you must go to a dry and meagre soil. Yet we should be sorry to have to extend the rule, and say that the poorer the soil the better the wine, for there are certainly very few patches of ground in America that can match in poverty the mountains of Champagne, the hills of Burgundy, or the slopes of Medoc.

"PREPARING THE GROUND, PLANTING THE VINES.

"This is probably as well understood in America as in France. In Burgundy, Champagne, and some other districts it is the practice to renew the vigor of the vines by laying down the cane and rooting the plant in a new place, which quite breaks up the original lines, so the plow can not be used. This is doubtless a good way to renew the strength of the plant, but it is objected to by high authority on the assumption that the older the stalk is the better the wine will be; on the other hand, Champagne vine-dressers have attributed to this practice in a great measure their almost total exemption from the vine disease.

"But then, again, others attribute that exemption to the general and long established custom of spreading over the vineyards a bituminous shale containing sulphur, a well-known antidote; and here we would recommend most strongly to our countrymen a renewed and sustained effort to combat mildew with sulphur. The experience of France and other countries is entirely in its favor, and its use is still felt to be necessary, and is still kept up.

"We think Americans have not been

thorough enough, and patient enough. Let them try again, and this time let them begin early, and to be sure to follow carefully these rules on the subject, which have been hitherto much better promulgated than observed. On rich and level land, a common plan in some districts is to set out double rows of vines at wide intervals, in fields chiefly devoted to other crops. The free exposure to sun and air thus secured seems largely to augment the yield, and this will be understood by any one who has noticed the superior productiveness of such of his vines as grow bordering on a wide alley or other open space. This is very different from planting vegetables, etc., among the vines, which is a bad practice.

"WIRE TRELLIS.

"These are becoming quite popular here, notwithstanding the cheapness of wood. The size of wire preferred is No. 16, and but two wires are used. They are stretched to strong posts set twenty feet apart, passing intermediately through holes of smaller posts or stakes. On the lower line, about eighteen inches from the ground, the fruit-bearing wood is trained, while the upper line, about eighteen inches above the other, supports the new wood. Many prefer to allow the fruit-bearing cane to do service for two years, instead of one only. There is no doubt that with wire trellises the pruning, tying, pinching off, etc., can be much more cheaply done than where the training is to stakes, and from the way the clusters depend from the horizontal cane, it is easy to see that there must be also a superior access of sun and air, and a greater ease in gathering the vintage.

"WINTER PROTECTION.

"It is a common practice to go through the vines with a plow every fall, and throw up a good ridge of earth against the stalks. The Hungarians have a more effectual way of guaranteeing against the cold of their rigorous winters, which is to lay the vines on the ground, cover them with straw, and

on the straw throw the earth; without this, it is said, they could produce no wine at all. Our native grapes are generally hardy, and will live wherever their fruit will ripen; but occasionally there is a severe season which seems to touch the very heart of the wood, and so enfeeble it that it falls an easy prey to disease. It was noticed that the mildew set in with great destructiveness after the two hard winters of 1854 and 1856.

"The thorough covering employed in Hungary would secure it against such occasional risks, and also might render it possible to grow European vines in our country. By its means, too, we could, perhaps, make the Scuppernong live in our Northern States, and obtain from it a sparkling wine, of foam and flavor unsurpassed. From these considerations and others, we recommend to the wine-makers of our more Northern States to lay down and thoroughly cover their vines regularly every fall; and to those in milder regions, to bank up the earth against the stalks as is done in France.

"We have derived most of our instruction in vine-dressing from the Germans, in whose native country there are no sunbeams to spare; and the celebrated Riesling grape is said to hardly ever ripen, and thus, perhaps, we have been led to attach too much importance to letting the fruit remain on the vine as long as possible before gathering. If we have been in error, it would be well worth while to know it, for, besides the loss by shrinkage, the ravage of insects and birds, quadrupeds and bipeds, during the last fortnight of the vine-dressers' watchings, is most disheartening. Now, it is contended by good authority in France that early vintages are the best, and that it is important, not merely in regard to quantity but quality also, to gather the fruit before it becomes over-ripe. Possibly what is true of white wine may not be so of red wine, to which last-named kind attention is so widely directed in Europe. Here the proportion of white wine to red

is very small, and it may be said that red is the rule, and white the exception.

"WHITE AND RED WINES.

"Our wine-makers in America understand very well the principles to be observed in the manufacture of white wine, and many of them, as regards care and nicety, are as good models as need be desired. But it can not be denied that the practice of selling the ripest and finest grapes for table use, and converting the unsalable into wine, prevails to a great extent among American vineyardists, and the result is the manufacture of much inferior wine. This has already injured the reputation of American wines, both at home and abroad. Of the much more complicated process of making red wine, however, American manufacturers are but little informed, for the reason that until recently they have had no grapes suitable for the purpose; but now that we have discovered those excellent varieties, the Norton and Ives seedlings—our estimate of the value of which has been very greatly raised by comparing wine from them with some of the highest grades of foreign productions—a few observations of methods of fermentation for red wine as practiced in France may be appropriate.

"In France, they will make either white or red wine from the same grape; but in America they have grapes whose pulp is so rich in coloring matter that they yield a very pretty tinted wine without any further treatment than what is given to make white wine, and a pure white wine can not be made from them; of this kind is the Norton seedling. Yet not for beauty alone do they put them through the process of fermentation on the skin, but because that process imparts qualities which, as affecting the palate, stimulation, digestion, etc., are quite different from what the other process imparts; many persons find red wine essential to their health, who can not use white wine, and *vice versa*."

[TO BE CONTINUED.]

LANDSCAPE OR HOME ADORNMENT.

BY F. R. ELLIOTT.

DIPPING into my portfolio a few days since, and looking over sketches of plans that I had made for various gardens, it occurred to me that perhaps some of these skeleton plans might be of use in communicating ideas for working up some new place about to be created by a reader of the *HORTICULTURIST*, and therefore I have transcribed and here offer two of them. As the style of the house, architecturally, as well as the association of the neighboring lots, has much to do with the kind of trees to be planted, I have omitted any detail, because such detail would be of little or no avail. I will merely say that if the house is of a square character, with a flat roof, and standing on nearly level land, then the prevailing character of the trees should be of a round-headed habit; but if the house is of a pointed gothic, or with many broken yet harmonious lines, and its location on some elevated position, then spiral and pointed trees should be largely introduced, and especially near the house.

Fig. 69 was designed for a lot the elevation of which at the house is some six feet or more above the grade at the public street, and the house situated about two hundred and fifty feet back therefrom.

The owner of this desired as few paths and roads as could be, and meet the actual daily travel demand. Neither did he want provision for many flower-beds, as he only kept one man to care for horses, garden, and all work. The beds next the public road are designed to be planted with flowering shrubs, in order to break a little the lawn from open exposure. So the bed on the right of entrance footpath is to be planted with shrubs, and also that where the carriage-road comes near the boundary to the left. The beds near the house in front are filled with low trailing evergreens, as *Daphne cneorum*, *Juniperis*

squamata, *repens*, etc., while the bed on the left of the footpath is planted with hardy perpetual roses and tree peonias, keeping the flower-garden proper up near the house and immediately in view of the

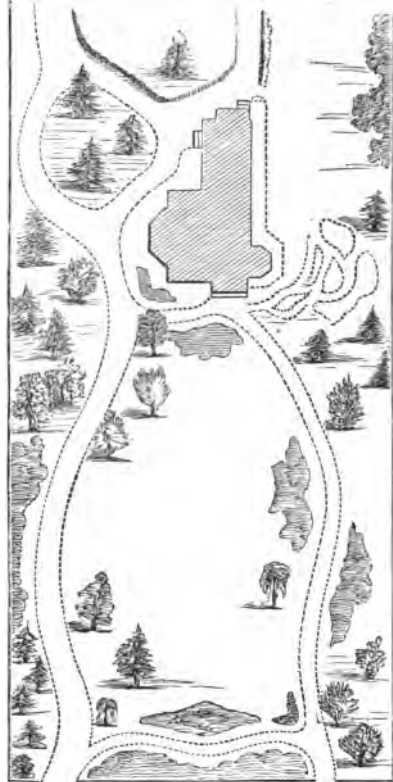


FIG. 69.

drawing-room bay window. As most of the landing is at the rear hall door, the turn-way is thrown in there, and a hedge borders the road on one side, separating it from the fruit or vegetable garden, barn, etc., beyond.

Fig. 70 is a design made years since for a lot where the front next the street was level, but back where the house was to

stand was high ground; and while it was desirable to have a lawn, etc., in front, yet the best view was in the rear. The plan of the house, therefore, was made for a terrace platform, and the roadways were cut down to a level with the front lawn,

again rises to its natural form, and is planted with ornamental trees and shrubs. The ** are the positions of old oaks that were growing in the ground, and too good to be destroyed. The right of the carriage-way is hedged and massed with hemlocks, while the beds in the main front of the house are planted with dwarf evergreens, and a hemlock hedge along the front or street line shuts the grounds from the public gaze, except as they obtain glimpses at the gateways. The rear of these grounds contains an ornamental green-house or conservatory, propagating-houses, pond, rocky cliffs, shaded walks, etc., making it really the most beautiful portion. The ground level, between the footpath and carriage-way from the street leading to the house, is somewhat higher than that of the lawn proper at the left, and although the path does not show it on paper, yet in reality it skirts a low bank.

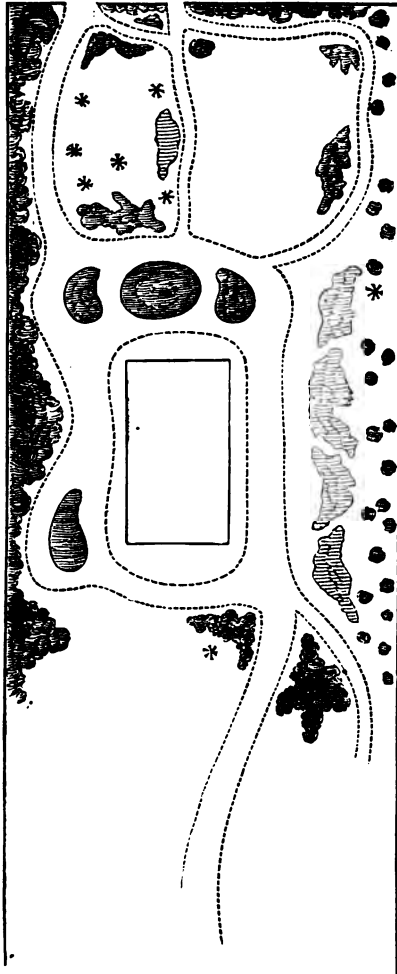


FIG. 70.

so that, standing thereon, a distant view could be had of the prospect in rear over the road and turf border at the left of the house. Where the flower-beds are arranged is a terrace, and back of that the ground

SEEDLING TREE PEONIES.—One of our Cleveland correspondents writes us that he has lately been through the rows of seedling tree peonies raised by Prof. Kirtland, of which we made notice last year, and that very few have this year shown any blooms. The named varieties—Colonel Wilder, E. S. Rand, and Doctor J. S. Newberry have none of them bloomed; but among those that have, is one of a most delicate, clear rose color, the flower very full and round and promising to be extra fine. Another has the petals colored much like the old peonia Banksii, but the flower is full double with each petal most delicately fringed. These seedlings have not yet been propagated, and while the Professor may devote time to hybridizing and originating, it is not his forte to perpetuate. The first is a matter of scientific taste, the latter a matter of commercial business. Our correspondent therefore suggests that some good, careful propagator make arrangement for the perpetuation of these really valuable new tree peonies.

NEW HARDY SHRUBS, DECIDUOUS AND EVERGREEN.

FROM "RECORD OF HORTICULTURE," NO. II.

BY A. S. FULLER.

Æsculus Michauxii.—This is probably a variety of our native species, *Æsculus Pavía*, or red-flowering buckeye. The plant, however, is more dwarfish in habit than the species, and the spikes of flowers much larger. When worked on the common buckeye or horse-chestnut, it forms a beautiful shrub or small tree, producing its large spikes of flowers in great abundance. We are indebted to Mr. Wm. S. Carpenter for a specimen plant imported by him from France.

Azalea.—The catalogues of European nurserymen contain long lists of new varieties of this beautiful shrub. The tender Chinese azaleas are far better known in this country than the hardy species. This is to be regretted, inasmuch as the hardy sorts may be grown by every one, and not be confined to those whose circumstances allow them to build costly green-houses for the purpose of growing tender exotics. We shall not attempt the naming of the best foreign varieties, but merely call the attention of our readers to this most beautiful class of shrubs. Even our own country furnishes a great variety, and by a little care in the selection, a splendid collection may be obtained from our woods and fields. We have found varieties of every shade of color, from the purest white to the darkest purple, and we have experienced no difficulty in making the plants live when removed from their localities in the open fields to the garden. Those who are seeking for choice ornamental shrubs should not overlook the native azaleas.

Arbor vitæ (Tom Thumb).—This new variety of *arbor vitæ*, sent out by Messrs. Ellwanger & Barry, is really a valuable acquisition. It forms a dense mass of fine, delicate foliage, not surpassed by any other

hardy variety. It also retains its color well through the winter, not turning a sickly yellow, as many others do, thereby detracting much from their beauty as evergreens. The Tom Thumb will certainly become one of the most popular varieties of the dwarf *arbor vitæ*s.

Arbor vitæ (Golden Tipped).—A variety of the common native species (*Thuja occidentalis*). It is a strong and vigorous grower, and apparently as hardy as its parent. The foliage is a rich golden yellow, there being scarcely any green leaves, except in the center of the plant. It is quite distinct from the common Variegated American or Chinese Golden *arbor vitæ*s. It is the only variety which we have seen that is really deserving the name of Golden. Where or by whom it originated is unknown to us, our plant being received a few years since from a friend, who said that it was supposed to have originated in a garden in New Rochelle, N. Y.

Cotoneaster Fontanesii.—A handsome shrub, with oval leaves and numerous small white flowers, which are succeeded by spherical-shaped fruit of a coral-red color (*Revue Horticole*, 1867). The *cotoneaster*s are very pretty shrubs, with small but numerous flowers. A number of the species are evergreen in the Northern States, while the deciduous varieties retain their leaves until quite late in the autumn. Most of the species and varieties are readily propagated by ripe wood cuttings, taken off in the fall, and preserved in sand or moss during the winter.

Deutzia crenata-pleno.—We named this shrub in our list of choice varieties in the first volume of the RECORD, and we again call attention to it, for it is worthy of a special notice. The flowers are quite dou-

ble, pure white within and a deep pink without; the strong contrast between the two colors gives the flower spikes a very unique and pretty appearance. It forms a shrub from four to six feet, of a dense, compact habit. The plants are now offered at a very low price, and no one should fail to procure this really very desirable shrub.

Hydrangea Deutziaefolia.—This new hydrangea bloomed in several gardens in this country the past year. The flower spikes are of an immense size, white at first, changing to a dull purple or pink. Like all of the hydrangeas, it is a coarse-looking plant when in bloom, and only suitable for the open border. It is apparently quite hardy, a merit which will make it quite acceptable to those who have room for a great variety of shrubs.

Hydrangea paniculata grandiflora.—Another new half-hardy shrub, with elliptic leaves and large, branched, pyramidal panicles of white flowers.—*Flores des Serres*.

Hydrangea Japonica macrosepala.—A variety somewhat resembling the *rosalba* of Van Houtte, but having the segments of the sterile flowers one and one-third inch broad.—*Gartenflora*.

Rhododendrons.—We have several native species of the rhododendron, all of which are beautiful shrubs, and well worthy of cultivation. They were, long ago, sent to Europe, where, through the skill of the gardeners of the Old World, hundreds of new varieties have been produced, many of which far excel the original species. There are also many species natives of the Eastern Hemisphere, and new ones are being constantly discovered. Hybrids in great number have also been produced, not only between the different foreign species, but those of our own country, until it is quite certain that no genus of evergreen shrubs can at all compare with the rhododendron for handsome foliage and gorgeous flowers. Many of the foreign varieties and species are not hardy in the North-

ern States, but there is a sufficient number to satisfy the most ardent admirer of this class of plants. It requires experience with each kind to determine its character, therefore one must import many to find a few that are suited to the climate; and the high price at which all new sorts are sold, prevents the majority of our nurserymen from testing them. There are, however, a few of our larger establishments that have expended thousands of dollars in testing the various species and varieties of rhododendrons; and they now offer to the public the benefit of their labors in lists of sorts which have proved to be perfectly hardy and reliable. We would advise those who want rhododendrons—and who does not?—to examine the catalogues of these nurserymen. There are so few nurserymen who make a specialty of this class of plants, that we shall take the liberty of naming two firms whose stock we have lately examined, and think it worthy of a special notice. We refer to Parsons & Co., Flushing, N. Y., and Hovey & Co., Boston.

Spiræa callosa alba.—This is quite a distinct variety of the old *spiræa callosa*. The flowers are pure white, and the plant is of a very dwarf habit. It blooms quite freely, and is altogether a desirable hardy shrub.

Weigela nivea.—This splendid weigela was introduced into Europe several years ago from Japan, but it is comparatively new in this country. The plant is similar in habit to the well-known *weigela rosea*. The leaves are large and conspicuously veined, and of a light green color; flowers, pure white, and produced in great abundance. A beautiful shrub, and worthy of a place among the many fine varieties of this species.

Weigela Middendorffiana, purpurea.—A new purple-flowering variety of *weigela Middendorffiana*; a robust, hardy shrub, with handsome dark-green leaves and large panicles of flowers, which are a purplish red, shading to black at the base of the petals.—*Floral World*, March, 1867.

INGRAM'S SEEDLING APPLE.

THE *Journal of Agriculture*, St. Louis, recently published a drawing and description of an apple under the above name, since which we have received samples of the fruit, forwarded us by the courtesy of D. S. Holman, Esq., secretary of the Greene County (Mo.) Horticultural Society. Mr. Holman

writes us that it was grown from a seed of Rawle's Janet, by Mr. Martin Ingram, and that the tree is productive and the fruit keeping until July. We would suggest that the word *seedling* be dropped from the name, and that the apple be called simply *Ingram*. Fruit, medium or

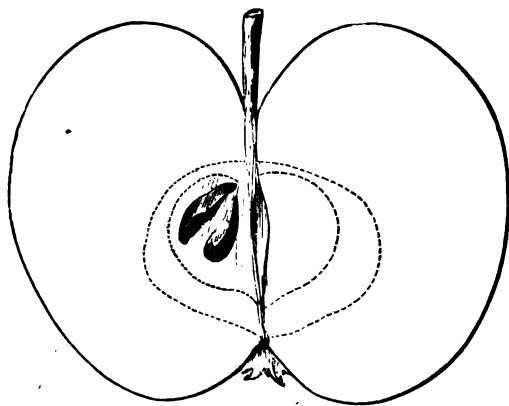


FIG. 71.—*Ingram's Seedling Apple*.

below, roundish oblate; color, a rich orange-yellow ground mostly overspread and with broken stripes of rich, warm red, gray russet dots, and slight marblings, with suffused surroundings; stem, medium length, slender; cavity, broad, open, pretty deep, often with a moldy, almost downy, russet appearance; calyx, small, open, with recurved segments; basin, open,

medium depth, sometimes slightly furrowed; flesh, yellowish white, moderately juicy, rich, crisp breaking, mild sub-acid, almost sweet; core, rather large for the size of the apple, with large capsules well filled with seeds, which are full and plump, and very dark brown. Received and eaten May 18th, 1868.

MULCHING.—This—July—is the month to apply mulch, and we have repeatedly written that new-mown grass is one of the best materials for the purpose. It keeps in place well, has no weed seeds, and is not unsightly. Stir up the ground well with the spading fork or hook hoe first,

then apply the mulch around the tree fully four feet in diameter for newly planted small trees, and about four inches thick. Be prepared to remove the mulch again as soon as the fall rains and cool nights commence, to be again replaced as soon as the ground is firmly frozen for winter.

ST. MICHAEL ARCHANGE PEAR.

SYNONYMS—Dusnar, Plombgastel, Plumbgastel, Plougastel.

Fruit, above medium to large in size, the sun and many dull russet specks; stem, stout, often inserted with a lip; calyx, medium, closed; basin, deep, regular, furrowed, or with compressed ribs; flesh, white, coarse-grained, especially near

ovate obtuse pyriform; color, greenish yellow, with considerable brownish red in

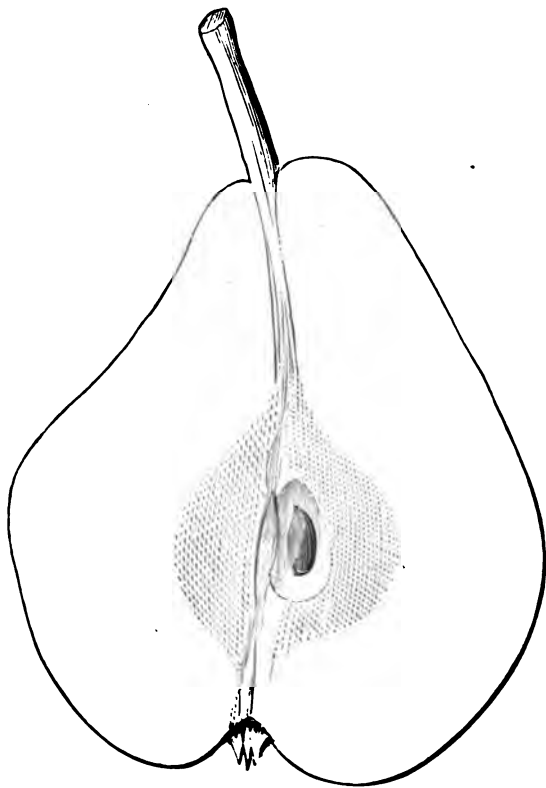


FIG. 72.—*St. Michael Archange Pear.*

the core, melting, sweet, juicy, rich aromatic; core, small; seeds, dark brown. Season, September and October.

The St. Michael Archange is a variety of the pear long introduced, and yet comparatively but little known. Wherever it

is grown, it is found to steadily gain in favor because of the vigorous, upright form of the tree, its relative hardiness, and uniform good quality of its fruit. It is also a productive bearer, and grows well on the quince.

GARDEN ADORNMENTS—DESIGNS FOR COVERED SEATS.

BY F. S. COPLEY, ARTIST, TOMPKINSVILLE, STATEN ISLAND.

Of all rural adornments, the covered seat is one of the first things that should command our attention in laying out a garden; if it be but half an acre, it would not be out of place; only let its design and situation be chosen with judgment so as to harmonize with its surroundings, then it will add to the mere beauty of the place, if we say nothing of the health, comfort, and pleasure it will afford our family and friends to quietly enjoy the pure air, a fine view, or a book.

The following designs will be found particularly interesting, from their novelty, simplicity, and economy of construction; and may be built by any one with a little ingenuity, from the trunks, branches, and roots of trees; only being particular that the wood is cut at a time of year when the bark will stay on. One of the prettiest and most novel of these is the Arbor Seat, and one of the cheapest to build, as it takes but one post, and has a trellis roof,



FIG. 73.—Arbor Seat.

and may be built lighter and rougher than any other, with better effect, being covered

with vines, which by judicious training could be made in a few years self-support-



FIG. 74.—Umbrella Seat.

ing, forming a natural arbor. To carry this out in the most interesting way, select six of the best hardy grapevines, of different kinds and colors, and plant them (in prepared ground) six feet apart, and the same from the center post. (Lay down and train to center according to rule.) The center post is the only piece of wood that need cost anything, as all the rest is mere firewood and bean poles. Make this of red cedar, not less than nine inches thick and twelve feet long, set firmly in the ground three feet deep, in a bed of *lime concrete*, to prevent decay; set the braces the same, as decaying wood is injurious to the vine. The lower braces should be five inches thick, of oak or hickory; the upper ones three inches and the arms four inches, of cedar, with butts placed to center; the cross-pieces may be of wild vine, and the finial of roots. The seat should be made of half-rounded twigs, placed a little apart, round side up, to shed water and dust,

with angle pieces of root on braces, for arms; and a piece of root or wild vine bent round to form a back to the seat and a protection to the vines.



FIG. 75.

These should be trained up and round the post to the top, each sending out a branch along the upper brace (to take its place when removed); from the top, train each down its opposite arm, to the end, branching off at pleasure, and interlacing so as to be self-supporting when the frame decays. The floor should be raised a foot above the level, and the roots of the vines protected by a grating. When fruit is not an object, other hardy flowering vines may be used, such as the purple wistaria, red trumpet creeper, etc.

The Umbrella Seat is the same in size and plan, but differs in having a close roof; the design shown is of shingles, cut in patterns; but pretty rustic roofs may be made of bark, moss, thatch, or sticks.

The frame, however, should be stouter, and the post thicker for this design than any other; being but one, the strain would be greater, and it would appear less. This is a foot thick, with six half-round pieces

nailed round to form a cluster and receive the angle braces; the foot of these with the post should be mortised into a sunk cross-frame, well coated with coal-tar and sand. The floor should be covered with small stones and gravel, mixed with hot coal-tar, using as little tar as possible.

The plan of the third design is a parallelogram of two squares, supported by two posts, each six inches square, and set the same in the ground. The roof is of boards with battened joints, set off with an ornamental ridge-board and balls. The seat is made of hard wood, rounding on top, and placed a little apart. For the sake of variety this was made a little more architectural, but the plan is equally well adapted for a rustic treatment as any.

The plan of the fourth design is an equilateral triangle. This has a shingle roof supported by three cedar posts, a lattice frieze, and a rustic seat. A few inches of the branches should be left on the post, to



FIG. 76.

facilitate the training of ornamental vines, as these would form its best and cheapest ornament.

ARTIFICIAL MANURE FOR POTATOES.—Superphosphate of lime, 4 cwt., sulphate of

magnesia, 2 cwt. Mix and sow over surface before digging or plowing.

A FLAW IN THE PATENT LAWS.

BY I. W. ENGLAND.

THE patent laws secure to the inventor such a monopoly of his machine or device as will richly repay him for his skill and ingenuity; the copyright act gives to the author the control of the fruits of his thought and genius; but for the agriculturist, the florist, and the horticulturist, who gives to the world a new plant or a valuable fruit, there is no protection whatever, save that which his own prudence and foresight can provide; yet agriculture is defined to be the basis of our prosperity as a nation. Why the maker of a new mouse-trap should be able to reap thousands of dollars from his invention, under our patent laws, while the propagator of a new plant, the discoverer of a new fruit, the producer of an improved variety of grain which shall minister to the pleasure and delight of millions, and perhaps add untold wealth to the resources of nations, should not be equally deserving of reward, surpasses our comprehension. Nevertheless such is the fact. There is no protection to this profession anywhere. May not this oversight of the law-makers have something to do with the want of enterprise, the slowness of improvement, the comparative stagnation which exists in all branches of agriculture?

The patent laws are only about two hundred years old, and up to a comparatively recent period patentees were regarded with such distrust and suspicion as monopolists and extortioners, that in the courts a patent was seldom permitted to stand, if any ingenuity could detect a flaw. Yet, notwithstanding this illiberal policy, during this period what wonderful progress has been made in the arts and sciences under the stimulus of reward which even these imperfect and partial

laws held out to the ingenuity of discoverers!

Compare the condition of the arts and sciences with agriculture, and what a vast difference do we perceive! It is true that we have made some progress in the cultivation of the soil; but do we not owe the great labor-saving implements which have superseded the spade, the mattock, the wooden plow, and the sickle to the beneficent influence of the patent laws? Something, too, we grant, has been discovered in regard to the chemical conditions of soils and their relative adaptability for plant-food. But how little has been done toward overcoming the obstacles which now attend the cultivation of our most valuable fruits, roots, and grains!

Have we not been too ready to set down to the account of nature the failures arising from our own ignorance? Does any one suppose that with an adequate incentive a remedy would not have long since been discovered for the ravages of rust, smut, mildew, and insects in the grain-growing regions; that a more definite knowledge would not have been attained of the causes which are leading to the destruction of our apple, pear, plum, and cherry plantations; our vineyards; the failure of the potato crop, and the means of their prevention? Undoubtedly; yet what is everybody's business is nobody's business. We see rot and mildew, mold and rust, decay and destruction yearly increasing where once was healthful plenty, and we stolidly resign ourselves to the reflection, that as Nature no longer smiles upon our efforts, it is therefore vain to fly in the face of Providence. So, instead of casting about for a cure of the evil, we cease to cultivate crops which have proved

so precarious and unprofitable. Hence our older States have almost wholly abandoned the growing of wheat; hence thousands of acres of vineyards have been uprooted; hence the stone fruits have almost totally gone out of cultivation in vast sections; hence the orchards are going to decay, because their uncertain crops are so small and worm-eaten as to become worthless; hence the cultivation of cotton is becoming hazardous and often ruinous to the planter. The same is true of tobacco, potatoes, and turnips; even the humble currant is infested with a crawling spoliator that consumes the crop.

Why is all this? Clearly, in our judgment, because while politicians and placemen have been ever ready to extol the dignity and the nobility of the tiller of the soil, they have left him to plod along his weary way without any special stimulus to improve the processes and products of his calling. It is all very well to say in public orations, that he who makes two blades of grass grow where but one grew before is a benefactor to his race; but what does it amount to? Suppose that some intelligent and thoughtful man devotes the best period of his life to experiments, and after years of labor and expense discovers a remedy for the diseases and disabilities now affecting the wheat crop in large sections of the country, or originates some variety of this grain that is proof against them—where is his reward? Here is a case in point: The Rev. Mr. Goodrich devoted eleven years of his life, and expended large sums of money, in producing certain new varieties of the potato, from seed (not tubers) imported by him from Peru, the home of *tuberosum solanum*.

That, surely, was a laudable and philanthropic endeavor—a service to mankind worthy at least of national if not of universal countenance and assistance. When we reflect how largely the product of this plant enters into the comfort, the health, and the sustenance of the community; how its failure has involved, and continues

to involve, thousands and tens of thousands in heavy losses; how it has repeatedly impoverished a whole people and brought dread famine to the doors of millions, one would suppose that the originator of a variety of this esculent that should be not only proof against rot, but immensely more productive than the kinds previously known, would be voted a public benefactor, and enriched out of the national treasury. Not so, however. That worthy minister of the Gospel, who literally went about all the earth doing good, derived just one poor hundred dollars from the sale of his tubers, and four hundred dollars from the gratuities of agricultural societies. Like most great benefactors, he died poor, bequeathing to his wife and family the sole heritage of a good name.

Why was this? Millions of dollars have been realized by the propagation of his potatoes; why did not he come in for some share of this rich reward? Simply because, like the honest, unselfish man he was, he proved the value of his tubers by disseminating them among societies and individuals throughout the country, either gratuitously or at a nominal price, to determine whether they were as valuable generally as they had proved with him. They proved invaluable, and those to whom they were sent speedily propagated an immense supply, which they sold at fabulous prices for their own personal advantage. Now, had we an agricultural department worthy of the great interests which it professes to conserve, this injustice would not have happened. Mr. Goodrich might have been protected in his discovery, and the profits to which he was so justly entitled would have gone into his own exhausted purse, to reimburse him for the years of patient research and heavy outlay which he had incurred for the benefit of his fellow-man.

Now we desire to suggest, and it seems to us that the accession of a new chief to the agricultural bureau at Washington is a good opportunity to broach the subject,

that what Congress has done for the literary man and the mechanic, that shall it do for the farmer, the florist, the horticulturist. Let there be, in connection with the agricultural bureau, an office of record, where the name, character, quality, description, etc., of new varieties of fruit and grain, originating in this country, shall be entered, and secured to the originator. Let specimens be sent to trustworthy correspondents of the bureau in various sections of the country, so that its value for general cultivation may be determined. Let the result thus arrived at be publicly announced under authority of the bureau, and the right to vend the article be vested in the originator and his licensees for a term of years. Something of this kind would wonderfully stimulate to continued improvement in the production of choice varieties of plants and grains to the great advantage and profit of the country. While it would secure to the originator the just reward of his skill and labor, it would protect the public from a thousand impositions now put upon them by the venders of new varieties of untried and doubtful value. As this business is now conducted, we have no hesitation in asserting that many thousands of dollars are annually thrown away in the purchase and planting of fruits, for example, which, however valuable they may have proved in their original locality, are totally unprofitable and useless for cultivation in other sections under an altered condition of soil and climate.

The case of Mr. Goodrich is by no means a solitary one. We know of many similar instances where other deserving horticulturists and agriculturists, who have devoted their best years to the public good, have had only their labor for their pains, other persons, to whom they have sent specimens of their plants, in various sections, to test their value, having stepped in to rob them of their reward. Every

year the nurserymen of the country are mulcted in large sums of money for the purchase of new and professedly valuable plants, which too often prove of little or no value. These being sent out at extortionate prices, for general cultivation, and failing to answer the expectations excited by the glowing descriptions published of their merits, tend to discourage cultivators and bring the profession of Horticulture into disrepute. Were some such system adopted as we have suggested, however, the honest experimenter would be protected in the product of his labor, the prices of new plants would be set at a more reasonable figure, so as to be within the reach of all, because the originator would, instead of, as now, being compelled to realize his profits out of his first season's sales, be secured in their enjoyment for a term of years. We presume that a royalty of one cent per bushel upon the potatoes grown from Goodrich's seedlings for seven years would have made him and his family independent. Who shall say that such a reward was not richly merited? Who would feel that such a price for the enjoyment of the fruits of his labors was a burden?

We know it may be urged that such a provision as this has never yet been incorporated into the patent laws of any nation; but of its necessity, its justice, there can be no question. As the United States, by its greater liberality to inventors, has stimulated the arts and sciences, and added to the industrial wealth and resources of our people more than any other government in the world, let it go one step farther, and, by judicious legislation, stimulate the husbandman to take rank among the highest order of productive agents, and elevate and dignify that profession which, however much lauded by poets and extolled by politicians as an ennobling one, has heretofore been of the earth, quite too earthy.

THE CURRANT WORM.

It is impossible for me at this time to give you a detailed account of my fight with this new and most formidable enemy of the horticulturist; but according to promise will try to put some of your readers on the alert for this terrible army which comes noiselessly and without banners, and ere we know it the foliage is gone.

The curculio has nearly discouraged us in the cultivation of plums, apricots, nectarines, cherries, and some varieties of pears and peaches, having proven to be entirely too smart for us, notwithstanding the boasted patents and nostrums for his destruction. It is barely possible that some good may grow out of the loss of the above-named fruits. It is stated that all things are permitted for some wise purpose, but one could hardly imagine any good thing resulting from the destruction of this antibilious and corrective fruit, the currant.

These worms undoubtedly are of very recent origin. We first heard of them but a few years ago; we must therefore conclude that creation is not ended. If this is true, and there is no good resulting from the destruction of this variety of fruit, it would suggest that the wise Creator has had nothing to do with it. About the middle of May they begin to appear on the lower leaves near the ground, and what afterward proves to be many hundreds may be found on a single leaf. They travel slowly until they attain considerable size, which gives ample time to destroy them before they have done much damage. By the 1st of June small black skins, with the worm's head attached, may be seen on the ends of the branches, and in a very few days no worms are to be seen. I have seen hundreds of worms on the top of a bush in the evening, and in the morning each one had left behind it its skin, and disappeared.

Whether in one night the larva changes into a fly, unlike other insects, or whether it goes through the regular transforming process of a chrysalis' life in a cocoon, in the earth beneath the bush, I have not ascertained, but intend to remove a bush, sift the soil, and learn the facts, if possible. I placed three sizes of the worms, from one third to fully grown, in a glass vessel, and put in with them some currant leaves; each of the sizes immediately concealed themselves at the bottom of the glass under a cocoon. This leads me to think that they enter the earth as above conjectured; but why they should leave their old suits behind them on the ends of the branches seems to be a mystery. It is about two weeks since the larvæ were placed in the vessel, and it is now swarming with beautiful yellow flies, in size and shape somewhat similar to the house-fly, a little more slender, with large abdomen, and prepared to deposit an innumerable number of eggs, which they are now fastening upon leaves put in the glass for this purpose. We may therefore suppose that the eggs of the new installment are already upon the foliage, and I am watching daily for their reappearance, which at the farthest will not be longer than a week, as they have been gone from the bushes two weeks; thus they appear and disappear three times during the season, and each time they come in greater numbers.

The bushes should not be allowed to touch each other; if they do, the larvæ will continue to eat and grow until they get to be an inch long. They do not in any case leave one bush and creep on the ground to another, but always leave when they reach the top, not being particular about their size or age, if the branches of another bush do not intermingle. I have had many bushes uninjured, with others

standing on either side entirely defoliated, when they did not touch each other. I find white hellebore a perfect remedy, and the De La Vergne sulphur bellows the most convenient instrument we have used. All sprouts and rubbish should be cleared away, that the worms may be readily seen. A slight puff with the bellows will kill them in twenty minutes. I think that this bellows should be in the hands of every person owning a garden, not only for applying the hellebore to the currant and gooseberry bushes, but for the application of sulphur and Cayenne pepper mixed to destroy the rose bugs, thrip, and other insects, on grapes, roses, etc. I use it weekly, with success, on valuable varieties.

The druggists who retail hellebore usually charge more than double the first cost. One of them, of my acquaintance, paid 30 cents per pound, and remarked that he

ought to retail it at 75 cents. Last season I paid 50 cents at retail. I bought 100 pounds this year at 35 cents, and was offered it by other parties at 30 cents, and it is quite likely that these wholesale dealers did not pay more than 15 or 20 cents per pound; and unless this article is so regulated that the consumer can get it at a fair valuation, it can not be used to any extent by horticulturists. As to its being poisonous, I can only say that I have inhaled it for two hours at a time, this season and last, and so have other members of my family. It is very unpleasant to the olfactory organs, and causes sneezing. This may be avoided by keeping to the windward side. The bellows should not be used when the bushes are wet, as the wires soon fill with the dampened powder.

A. J. CAYWOOD.

POUGHKEEPSIE, N. Y.

EXTRACTS FROM FOREIGN JOURNALS.

DIPLADENIA AMOENA.—This valuable acquisition among stove plants has been raised from seed of *D. amabilis* by Mr. Tuke, of Bramley, near Leeds. The flowers are three inches in diameter, and the foliage a more intense green than the parent. Mr. T., who is a successful grower of this fine genus, uses as a compost rough fibrous peat, sand, and a few rough bones.

GLOXINIAS — PROPAGATING FROM LEAVES.—As soon as the young leaves have attained their full size, remove them with half inch of leaf stock, and insert around the edge of a pot in a mixture of loam, leaf mold, and sand, with a layer of sand on top to root them in. When rooted, remove into small pots, using a compost consisting of two parts loam, one part leaf mold and thoroughly decayed cow-dung, with one half part clear sand.—*Gardener's Magazine*, p. 146.

14—JULY.

VIOLA CORNUTA.—The color of this plant is quite indispensable in large mixed masses, and its combinations with most of the silver-edged pelargoniums are truly charming. The mixture of *viola cornuta* with mangles, pelargonium, and sensation chrysanthemum was universally admired. As a rule, all violas are gross feeders, and should be planted on good ground, plenty of rotten manure being used.

SETTING THE FRUIT OF VINES.—Mr. Fowler recommends the collection of pollen, and dusting (fecundating) those varieties that do not set freely. He recommends a night temperature of 72° when the vines are in bloom. Contrary to the received opinion and ordinary practice, he does not reduce the amount of moisture in the house while the plants are in bloom, unless there is a deficiency of sunlight. He likewise advocates a rather high day tem-

perature and a small amount of air during the night until the fruit is set.

PANSIES.—To grow them successfully use fresh soil annually. Slight shading from sun is found to be beneficial. Watering should be avoided, unless absolutely necessary; and when required, to be done in the evening.

LATE GRAPES.—Mr. Harman gives his experience with a house 102 feet in length for growing late grapes. He states that in December and January the Alicanthe surpassed all others for form and appearance; but that the race for late keeping seems to be between Lady Downes and Barbarossa [Gros Guillaume]. Last year he cut the last of Lady Downes on the 18th of March.

VARIEGATED ZONAL PELARGONIUMS AS SPECIMENS.—Mr. Greive, the experienced cultivator of these charming plants, recommends the selection of the best of autumn struck cuttings. In February shift into pots one size larger, keep near the glass and in a temperature not lower than 45° as a minimum. Turn the plants frequently, so as to expose all sides to the sun. Early in May shift into six or eight inch pots, using a compost of turfy loam enriched with a small amount of decayed manure. During the summer months, they succeed best in a pit or ordinary frame fully exposed to the sun. Any leading shoots may be topped. In June or July the plants will become beautiful objects for decorative purposes.

PYRETHRUM, GOLDEN FEATHER.—The useful bedding pyrethrum, golden feather, comes true from seed, thus dispensing with the more tedious process of propagation by cuttings.

FUCHSIA GOLDEN QUEEN, in the coloring of its leaves, resembles that favorite, Mrs. Pollock Geranium; it is a good grower, but blooms sparingly. Golden Fleece is strictly a bedding variety; it stands all kinds of weather during the summer, and forms a beautiful miniature golden hedge from six to ten inches high.

GRAFTING PEONIES.—The tree varieties are difficult to increase by division; but can be easily propagated by grafting. From the middle of July to the middle of September obtain strong roots of herbaceous varieties, and a graft with one or more buds inserted upon the side of the root. The grafted roots must be put under bell-glasses, or in close frames with a northern aspect; the grafts soon become united, and produce roots for themselves.—*Floral World*, p. 117.

LADY DOWNES' GRAPES.—A correspondent referring to the difficulty of inducing this grape to break its buds regularly, was induced to remove the outer covering of the buds with the happiest results.—*Cottage Gardener*, p. 323.

SELECT VARIEGATED ZONAL GERANIUMS, excluding the most expensive: *Golden*—Mrs. Pollock, Sunset, Sophia Cusack, Lucy Grieve, Lady Cullum, and Mrs. Benyon. *Silver*—Italia Unita, Argus, Beauty of Guestwick, Imperatrice Eugenie, Burning Bush, Silver Star, Bronze, Beauty of Oulton, Bronzed Queen, Mrs. Longfield, Canary Bird, Luna, Circlet.—*Ibid.*, p. 331.

RAISING SEEDLING FERNS.—Take pots or pans and fill them half full of rough pieces of crocks; then take fibrous peat, break it roughly, and thoroughly incorporate with an equal proportion of sphagnum moss. Fill the pans or pots about two inches above the level of the rim and make it firm. When the compost is properly moistened, take the fronds of the varieties desired and shake them over the compost, and draw the hand up the underneath side of the fronds to dislodge the spores. Cover in the bell-glass and stand the pots or pans in water in a shady place.—*Ibid.*, p. 148.

COMPOST FOR FERNS.—For finer exotic varieties use a mixture of equal parts of sandy peat, leaf mold, silky loam, and cocoa-nut fiber, with a little silver sand. For large-growing kinds as well as British varieties, a mixture of half fibrous loam,

and the other half peat, leaf mold, cocoanut fiber, sand, and burnt clay.—*Ibid.*, p. 156.

HYACINTHS.—After blooming, these are generally thrown away. We can grow them in this country as well as the Dutch; and the way to keep up a stock is to have three beds, and let them follow one after the other: No. 1, for offsets and weak bulbs; No. 2, for bulbs that have flowered, and are removed from glasses and pots to finish growth and ripen; No. 3, for bulbs to use next season for display. They should never be allowed to bloom in these preparatory beds.—*Ibid.*, p. 174.

PAMPAS GRASS.—To grow it well it requires a deep moist loam, heavily enriched with rotten manure and leaf mold; and during its season of vigorous growth—from the end of May to the end of September—it should be frequently supplied with weak liquid manure. Its natural habitat is beside the rapid and frequently swollen streams of South America.—*Ibid.*, p. 174.

ROOT CUTTINGS.—This method of propagation, though not new, is but little known and but little practiced. Neuman propagated *Dais cotinifolia*, *Pawlonia imperialis*, *Maclura aurantiaca*, *Cydonia Japonica*, *Halesia diptera*, and *Araucaria Cunninghamii*. We have seen multiplied in the same way pelargoniums, peonies (tree and herbaceous) roses, mulberries, grevilleas, etc. M. Josst raised by the same mode *Sarracenia rubra*, *purpurea*, and *flava* by means of cuttings of the rhizomas of these species. Mr. Bain, of Dublin, increased by root cuttings *Ouvirandra fenestralis*, *Sarracenia* species, *Drosera binata*, *Dionæa muscipula*, and *Cephalotus follicularis*.—*L'Illustration Horticole*.

VINE GRAFTING.—Cut back the stock at winter pruning to point where it is to be grafted, leaving an eye opposite to where the cion is to be inserted. When this

bud has grown six inches, pinch it back to three leaves and whip graft on opposite side. Bind with matting and cover with clay, and then with moss over the clay. Keep the moss moist with water of same temperature as the air of the house. When the buds on the cion have commenced growing, remove one leaf from the stock. When the cion is fairly in leaf, remove the shoot from the stock.

VALUE OF ORCHIDS.—At a recent public sale at Liverpool a specimen of *Dendrobium Falconeri* sold for sixty-seven guineas.

GLADIOLUS CULTURE.—When the gladiolus is grown in rich stimulating soils, it will produce the largest and finest spikes, but at the expense of health in the bulbs. I find the varieties grown in poor sandy peaty soil have the healthiest bulbs. After flowering, and as soon as the leaves begin to change color in October, the bulbs are taken up and spread in a dry airy room, secure from frost. I find the best way to raise seedlings is to sow the seed in April on a south border, the soil being made very light with plenty of sand and leaf mold. If the seed is sown in pans and boxes, the roots become cramped, and the bulbs never grow so fast as in the open air.—*Journal of Horticulture*, p. 39.

YUCCA PROPAGATION.—In removing old plants of yuccas, an ample supply of young plants can be obtained by taking roots of the size of a finger and cutting them in lengths of three or four inches. If slightly covered by soil, young plants will be produced without trouble.—*Ibid.*, p. 44.

POTATO PRODUCE.—The gross average return per acre of numerous varieties was from—

	Tons. Cwts. Qrs. Lbs.			
1 oz. sets.....	10	19	8	17
2 "	12	15	2	15
4 "	13	9	0	2
6 "	16	13	1	16
8 "	18	11	0	16

—*Ibid.*, p. 47.

"THE ENEMY."

IN the April number of the *HORTICULTURIST* for 1866 is an earnest and able article under this caption. Many such articles, doubtless, appear from time to time. Some "watchman on the walls" gives the alarm, and earnestly and truthfully warns all of the great and present danger. But the masses do not heed. They only see their own individual losses, and never think of what the grand total loss amounts to. The great complaint is, a want of unity of action among those who are, or should be, interested in fighting this insect enemy. I will not dwell on this point, but will endeavor to show some other reasons why this enemy is not conquered.

In the first place, the masses know very little of the nature and habits of this insidious and destructive enemy; and this "little knowledge," always a "dangerous thing," in this case only discourages them. "Where is the use," say they, "in destroying hundreds a day even, when we are told they increase by hundreds of thousands?" And truly it does seem rather a small business to send a busy farmer "bug hunting" among his trees and plants when his farm crops demand all his time. He will tell you that he is "losing deal" crushing one worm at a time, when the chances are that one moth will produce more than he can destroy, in this way, in a whole season.

I will endeavor to give a few ideas showing the *nature* of this enemy, *when* to fight him, and *how* to fight him successfully. However interesting to an entomologist the study of the natural history in full of each of the many forms of insect life, only a few general facts are necessary to those who only wish to rid themselves of what to them are truly "enemies," and such as they are *not* commanded to "love."

When the warm days of spring are sufficiently advanced, the hosts of this insect enemy come forth from their hidden re-

treats (from the earth, old farm buildings, hay-stacks, and forks and limbs of trees, where they have hibernated in the chrysalis state) as perfect *winged* insects. No matter what the size, from the diminutive midge to the great drowsily humming beetle, the rule is, they are all *winged*. In this stage of their existence they are not directly injurious to vegetation. The male seeks the female, and having passed a short honeymoon among the flowers containing their food, he dies, having accomplished all that he had lived through the long winter to perform, that is, the impregnation of the female. She, in a few busy days, deposits her thousands of minute eggs in places at once the most secure and convenient to the food of her future offspring, and having finished her work, dies. These eggs are soon hatched out by the warmth of the atmosphere, and small worms appear, which at once voraciously attack the parts of plants which constitute their natural food. As they increase in size, and their local supply of food becomes exhausted, they, by various means, transport themselves to other places, sometimes to distant fields, to seek new supplies, and continue to be very destructive until this stage of growth is finished, when, by another remarkable change, they pass through the chrysalis state, and emerge perfect winged insects again. Thus two or more broods come into existence in one season, and the number of offspring from one pair in one season is immense. Those who go into the chrysalis state during warm weather require but a short time to emerge to continue the work of destruction through their teeming progeny. Cold weather never comes soon enough to cut off an entire race, though more are destroyed in this way in some seasons than others, accounting for their appearance in greater or less numbers.

From the above well-known facts it is evident that it is in the form of slugs, worms, and lice that insects injure vegetation, and hence the general error of attempting to destroy them in this stage, and, because of the failure of such attempts, of despairing of ever accomplishing any satisfactory results. I believe that farmers are more ready to give up trying, under such discouragements, than any other class of men, owing perhaps to the wide latitude of failure or success which nature allows them. Let them take a lesson from the grape-growers, who are still fighting their phantom enemy, mildew, with unabated zeal, though constantly, up to this time, losing ground. "An ounce of prevention is worth a pound of cure." Let them take the enemy at a disadvantage: while enjoying the honeymoon, and reveling among the flowers with his spouse, spread snares for his feet. In other words, the only practical time to attempt the destruction of injurious insects is in the moth or perfect winged state. The reason "why?" is that by destroying one female moth, you destroy a thousand rapacious worms in embryo. But the question "how?" brings us to the third, last, and most important part of this most important subject.

"In times ago," when the Southern planter employed all his time and means in the production of the one staple, cotton, the insect enemies of the cotton plant committed such havoc as to lead the minds of the planters to search for some means to stay their devastating march. After the crop has passed the dangers of its infancy, and arrived at the time of flowering, when the vast fields appear a sea of luxuriant green, comes the dreaded "army worm," devouring every green leaf, leaving the fields bare, as though blighted by a hoar frost in midsummer. Scarcely have the plants recovered from this shock, and clothed their naked limbs again with tender leaves, when the "boll worm" comes in the track of his forerunner, and attacks the

fruit of the plants, devouring the bolls themselves. Many expedients were resorted to to save a part of the crop at least. Some kindled fires at intervals over the fields on the appearance of the moths; but though many were burned, many more were attracted from neighboring fields where no lights were kindled. Plates containing molasses, placed the height of the plants on stakes at intervals over the fields, were found much better, though very expensive, as the rain washed away the molasses, and the sun dried it up.

The next step was a rude lantern with a tallow candle burning inside, and a tin plate or pan beneath, containing molasses, which was more efficacious, but more expensive, than the plates, adding cost of candle, etc., to loss of molasses; this was patented. An energetic and intelligent planter, Dr. J. M. Heard, of Monroe County, Miss., then set himself carefully and resolutely to work, and never ceased from his labors until he had perfected an invention known under the name of Heard's Moth Trap," which, with the careful study he has bestowed up it, leaves no room for improvement. A bait pan, containing molasses and water, flavored with the oil of annis, or some other essential oil, covered with a broad cover, to protect from sun and rain, the cover supported by an inverted triangular cone, the whole made of tin, and supported by a stake passing through the center of the pan, is placed among any trees or plants infected with insects, and you have planted the most effective battery in the world to destroy this kind of enemy. It is necessary to visit the traps frequently to remove the dead insects and replenish the bait pans. For this work the operator provides himself with a sufficient quantity of the prepared bait, and a tin bucket with a wire gauze strainer fixed inside. The insects are removed from the traps and thrown into the bucket, upon the strainer, when the molasses drains off into the bucket below, and is used again. The insects are thrown to

the poultry, and thus nothing is lost. The brightness of the tin attracts the moths at night as well as the odor of the bait. Flying toward it, they strike against the sides of the inverted cone, and are precipitated into the glutinous fluid below, where they

die a luxurious death. There are two modifications of this trap—one for the bee moth, roaches, crickets, etc., the other the best and most simple fly-trap in the world.

F. W. V.

MERIDIAN, MISS.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

WE have received the following letter, which we publish for the benefit of our readers, at least all of those who take an interest in the subject of which it treats. The writer has been long known to us as one of the most successful poultry breeders in this country—not for profit, but purely from love of the occupation. He proposes to give us, from time to time, articles in which the various breeds, their merits and faults, will be freely discussed, and in this he will avail himself of the experience of another poultry breeder of note.

T—, MASS., May 19, 1868.

F. W. WOODWARD, ESQ., PUBLISHER
"HORTICULTURIST," NEW YORK—*Dear Sir*: Having received, through our mutual friend Mr. E—, of your city, an invitation from you to become a contributor to the *Poultry Department* of your interesting and widely circulated monthly magazine, I drop you this hasty note to say that, whenever the demands of an active business vocation may be so far relaxed as to permit me, I shall take great pleasure in contributing an occasional paper upon a subject in which I take a very lively interest myself, and in which almost every household in the land is more immediately

or remotely interested. Why, sir, the poultry question seems like a rather insignificant matter from a mere casual glance at it; but when you critically survey it in its diversified ramifications it looms into an impressive significance, just as the *pin* does in the economy of the toilet and the demands of a refined civilization. Without *poultry* and *pins* what would the dear women do? Why, sir, I stand aghast at the consequences to the *cuisine* and to the drawing-room at the obliteration of these indispensables! Just think, for a moment, what a wonderful commotion would arise in your great city if an immediate embargo were laid upon the transportation of poultry and eggs into the metropolis! Why, the question of *Presidential impeachment* is a tame and insignificant matter in comparison thereto. Every household would rally in rebellion; popular meetings would be called, and a monster indignation meeting would fill the Central Park to denounce the cutting off of the omelets, the custards, the cakes, and the innumerable other dishes into which the indispensable egg enters, and to clamor for the restoration of the broilers, and the capons, and the *poulets*, which contribute so largely to the necessities of the invalid and to the gratification of the epicure.

There is a wide-spread demand for poultry, and that demand is all the while swelling and enlarging, and he who makes the largest contribution to it is a real benefactor—a benefactor who is far more worthy of the applause and patronage of men than the blatant demagogue who inflames the passions of party zealots that he may gratify a low and selfish ambition, or even the bedizened warrior whose guilty march to triumph and to power is not unfrequently over the forms of violated purity and innocence, and the prostrate remains of right and justice and liberty.

I take it for granted that you desire to have me give you the results of my own experience touching the *varieties* and *characteristics* of the several breeds of fowls with which I am most familiar, together with whatever facts relative to their *breeding, management, diseases*, etc., I may conceive to be of general interest to your readers.

The bare mention of the more prominent points to be elaborated opens up before the vision of the poultry fancier an almost boundless field. But when it is remembered that the space in your magazine which may be allotted to this subject is extremely limited, and besides, that the pressure of active daily business duties prescribe limits to the moments which I may give to the task, it will hardly be feared that any dissertation will grow into such voluminous proportions as to become burdensome.

As I can not enter analytically into my prescribed theme in this initiatory paper, it will not be amiss to premise that the question will be considered mainly from a *utilitarian* stand-point—the point from which, no doubt, the mass of your readers who take an interest in it would prefer to have the subject considered. Some men breed poultry for *pleasure*, while the mass of them breed for *profit*—just as some of your neighbors and friends, no doubt, of different tastes and views, cultivate their gardens and their fields. While the gar-

den of one enchants the eye with the blushing and multiform beauty of a thousand flowers, and intoxicates the senses by the tide of incense which they pour upon the summer air, the field of the other spreads its smiling sheaves of plenty as a blessed ministry to the grosser needs of men. The *beautiful* and the *useful* blend together their charms and forces, and pay a grateful tribute to the poetry and prose of mortal life.

Experience is assumed to be the only sure and trustworthy guide in testing the merits or qualities of the different breeds of fowls. And though there must, of necessity, be somewhat diverse results with the *same kinds* of fowls, because of the different management and care bestowed, yet the weight of the general and intelligent testimony assures a proper verdict in the end. There can be no assured and unflinching success in poultry growing without careful attention to the whole routine of duties demanded in the hennery. The generally accepted axiom, that “eternal vigilance is the price of liberty,” carries an impressive lesson to the poultry breeder, whose experience will ultimately demonstrate, in that specialty, that constant watchfulness is the price of success. Some men seem to imagine that to secure a *good breed* of fowls will guarantee their success, irrespective of any agency on their part to keep them good by proper feeding, breeding, etc. Never was there a greater delusion. No inherent excellences in the entire scale of animated nature can bear up under the pressure of ignorance and neglect. Adam's great transgression has written the fearful word *decay* in such impressive characters upon all animated life, that we can only hope to bribe its swift consummation by paying the tribute of exacted toil and sweat. We can hardly win success without deserving it, and we shall not certainly deserve it, and ought not to expect it, without the employment of rational and well-directed efforts.

Very truly, etc., E. W.

DWARF MAGNOLIA CONSPICUA.—A few days since (June 8), visiting Prof. J. P. Kirtland, I saw in his grounds a seedling magnolia from the *conspicua*. In habit of growth it was about with *purpurea*, a little more upright, and with flowers about two thirds as large as *conspicua*, and the petals a pure clear white, but not opening until about a week or ten days later. It promises a valuable acquisition to be embraced in first-class shrubs.

F. R. E.

MR. EDITOR: As the young mathematician finds mistakes in his arithmetic, and detects the errors of Butler or Pinneo, so we beginners in horticulture discover inconsistencies in Downing and Fuller. They teach that if a tree is heavy laden with fruit this year, its vitality will be so taxed to perfect it that few or no fruit buds will be formed for the next. My neighbor, Richard Gosney, has a tree in his orchard which seemingly was not exhausted by excessive growth, yet stood year after year without fruiting. But three years ago, while Ezra Hicks was hauling a load of hay out of the orchard, one branch was badly injured. The next year that branch was literally full of apples, while the balance of the tree was barren as before.

Of course the hay should not have been in the orchard; but you need not speak of that, as I intend to scold Uncle Dick for it when next I see him. And the Ezra Hicks above spoken of is no kin to the Hick's Apple, but a good fellow for all that.

Well, I know several other examples that seem to conflict with theory, but lest I get picked up on them, like the boys that find mistakes in their lessons, I will not mention them now. You see, this is a new business to me, though when I was a boy my father often complained that my mania for tree setting made necessary a job of grubbing every year. But now I have a patch of hills of my own, and having a little leisure, intend to have my *fun* out. Said land is beautiful to look upon.

The hills go up to the clouds most, and the hollows so deep that the sun never shines in them. It looks romantic—decidedly—unless a man feels concerned about his bread and butter; then it seems more formidable than picturesque.

When the timber is deadened, or cut off, the bushes come up as thick as the hairs on a dog's back. The soil is not deep enough, nor rich enough, to brag much about; but any land that can sprout hop-poles like this will grow peach-trees. So I set out three hundred budded trees last fall while the ground was in fine condition, and they are making a splendid growth. I also set nine hundred this spring—budded—most of which are living, but not doing half so well as those set in the fall. Had it not been for the excessive rains, no doubt many would have died.

I speak of them as being *budded*, from the fact that they are considered a very unsafe investment in this country, while seedlings average about three crops in five years. Budded trees are all full this year. I have an acre planted in seeds, and shall plant them as seedlings this fall, except a few to be budded with nectarines and almonds.

By the way, I read an article in an old number of the *Prairie Farmer* (about 1858) from some man near St. Louis, who said that almonds would grow there. So, three years ago, I procured two trees, one of which came near dying; but the other made a splendid growth, and is now as full of fruit as it can hold—as full as a peach-tree.

On this land, beside the bushes which come up so thickly in old deadenings, wild grapevines also spring forth, and make a perfect tangle. These vines, about every other year, are full of grapes; and people go miles to get them, and call them good. Can't say that I like them; but their presence and productiveness under difficulties led me to hope that better kinds might do well. Speaking of these wildlings reminds me of an anecdote told me to-day, showing that the taste of our people is not well educated in the matter of grapes. The gentle-

man relating it had a splendid lot of Delawares, and also some fine Concords, and took a basketful of each to market, but found it very difficult to dispose of the samples, even, at a very low rate. People admired them as something of a show; but what use to pay eight or ten cents a pound for them when the woods are full of wild ones for nothing? He finally came across a friend, a banker, I think, who concluded to take one basket, and was told that he might have his choice at the same price; and, after tasting carefully, expressed himself highly in favor of the Concords!

Having had symptoms of grape fever repeatedly, I read Husmann's book, and it took a deep set. Had a piece of old deadening grubbed out, and being too full of stumps, and rather steep to plow to advantage, I had holes dug with a spade, wide, but shallow, and having them partly filled, set the roots near the top, and shall have the spaces between spaded up. I do not give this mode with the expectation that future generations will adopt it, but that it may go on record. With reference to the final result: the wild vines are upon the very surface; and if they can grow ten or fifteen feet in a year, Concords ought to grow *some*.

I have planted eight hundred one-year-old vines in this manner, and they are making a fine start, scarcely one failing to grow. But I went out a few days ago to break off all the buds, except one or two, and found the whole earth covered with locusts; and as they were letting-in rather heavily on the young vines, I concluded to withdraw my services until I shall see what these things are going to leave. By-the-by, I feel interested about their proceedings, and will stop this epistle to go and see; but I don't want to sign my name to it, for there are some people who would think I had better be attending to my old business. The names significant of the horticultural profession are already assumed by different writers, except, perhaps, it is the word "Amateur" Horticulturist, which is

certainly a very pretty name, but is awarded, by general consent, to the older and more eminent members of the profession. Come to think, *Immature Horticulturist* sounds nearly as well, and is so much more appropriate that I will adopt it as my *nom de plume*. There is no need of being over-particular. If a name *sounds* well, and is *appropriate*, that ought to be *sufficient*.

With the eagerness characteristic of new converts, I sign myself,

Fraternally yours,

IMMATURE HORTICULTURIST.

CENTRAL INDIANA, May 28, 1868.

A FINE VINE.—One of the most remarkable vines we have ever seen is now in full bearing in Kaye's Nursery at Finchley. It is not so large as either the Hampton Court or Cumberland Lodge vines—much smaller, in fact; but in point of size of bunch neither of these, nor any other vines we are acquainted with, approach it. The Cumberland Lodge vine is considerably finer than the Hampton Court, and bears about 2,000 bunches, looking meanwhile as if cribbed and confined for room, as the shoots reach the extremity of the great house, and are there cut off, just as we are obliged to do in small vineries; but one of the Finchley bunches is as large as three of those we have seen at Hampton Court and Cumberland Lodge. The fact is, the vine may be grown to a fabulous size if supplied with all the root room it can occupy, and a suitable soil, and with house-room, so that there is not so much of the remarkable about those two famous vines; but the Finchley vine, while extraordinary as regards size, is still more so, as we have said, for the size of its bunches.

The curious part of the matter is, that no unusual pains were spent upon the making of the border in which this fine vine grows. It is made on a hard clay bottom, a considerable quantity of brick rubbish being placed on that part, with a slope to a drain at the front of the border

which is about fifteen feet wide. It is not quite raised above the level of the surrounding ground, as most borders are with our great growers. The soil of the border is not that epicurean kind of loam recommended by most writers on the vine, but just the top spit which had been cleared off building ground in various parts of the district—now and then very sandy, occasionally of a stiff and unctuous clayey texture, with here and there a lot of brick rubbish; in short, a mixture of the better kinds of earth and rubbish which are so easily obtained in a suburban or other district where much building is going on. The border is about four feet in depth. No manure is mixed with its ingredients, except what little may descend from the remains of the annual winter covering of stable manure with which it is protected during the winter and early spring months. The house is 89 feet long by 18 feet wide, span roofed, and heated with hot-water pipes. The vine enters at the middle of one side, and goes across the roof, making five equal breaks, or, in other words, sending five fine opposite branches to each end of the house, the base of the main stem being of great thickness for a vine which has not been planted ten years. It quite fills the house, and would no doubt furnish three times the superficies it now does if the house and border were sufficiently extended. At the time of our visit it bore about 300 magnificent bunches of grapes, running from 2 lb. to 5 lb. weight each. What struck us as most remarkable was that the bunches were equally fine all over the house, the lowest and farthest extremities of the building exhibiting bunches as heavy and as fine as the highest and most favorable parts. Usually, with ordinary vines, much discrepancy occurs between the bunches on the same rod. It is doubtful if such a crop of heavy bunches was ever before shown by one plant, as however large we may grow the poor Syrian and other grapes, of large bunch but inferior quality, to obtain such bunches as these

of the Black Hamburg, even on a vine of the ordinary size, is considered very good work. The attainment of the result we have mentioned by simple means is well worthy of record. It surely proves that vine culture of the highest character is a much more simple affair than amateurs and many practical horticulturists believe it to be. There are many glass arcade roofs that might be highly embellished and rendered profitable by such a plant as this. If the amateur instead of building a few distinct small houses, would erect a good roomy one, and cover the roof with vines, it would give much more satisfaction than is often attained by those who have not much time or attention to devote to glass-houses. A large span-roofed vinery of the sort might be made to afford a very agreeable promenade in winter, a home for considerable quantities of green-house and bedding plants, shelves for early-potted strawberries on each side, room for a fine bloom of chrysanthemums in autumn, and not a few other things for which special structures are often provided. In summer, when the fruit would be ripening, and the foliage occupying the roof, we care very little for the indoor garden, and are usually too glad to leave it, while the plants we have named must, for the most part, be out of doors or in frames.—*The Field.*

HINTS ON PLANT-GROWING IN LIVING-ROOMS.—Many persons are either deterred from, or misled in, growing plants in living-rooms by reading the lugubrious nonsense written about the danger of keeping plants in such situations after nightfall, or in perusing the mystified directions given from time to time for their cultivation under the head of "Window" or "Indoor Gardening." Such instructions, for the most part, consists of *nostrums*, *secrets*, and *tricks*, which are not only pernicious, but silly, and tend to puzzle and perplex the inexperienced, by creating a belief that there is much more art in growing plants in such situations than there really is.

But as the former of such statements may with propriety be placed in the category of *absurdities*, so may the latter instructions be transferred to that of *twaddle*; for the principal cause why plants in living-rooms do not thrive so well as those which are kept in plant structures, is chiefly owing to the extreme dryness of the air in sitting-rooms, and consequently their being subjected to a constant drain upon the moisture in their leaves and the soil in the pots—the leaves under such circumstances being deprived of their water by evaporation instead of by perspiration; and in the exercise of their absorbent functions being more or less disarranged from a deficiency of moisture in the air, for all plants are more or less dependent upon the vapor in the atmosphere as a source for their healthy development.

Much, however, depends also upon the suitability of the plants selected for the purpose, and the regular attention given to them, especially during the winter months; for it is an unquestionable fact, that plants in sitting-rooms require greater care and attention, and suffer more from neglect during the dull months, from November to February, than at any other period of the year. Therefore the first thing to do in cultivating plants in living-rooms is to determine what are the most suitable kinds for such a situation; and the more select they are, according to habit and culture, the easier will be their treatment. Plants of low and humble growth should always be kept in the front, and close to the glass, while the larger growing ones may be elevated behind; and in order to favor in the greatest degree possible the harmonious growth of the plants, and obtain a uniform development of the branches and leaves, the position should be capable of admitting light as much as possible on all sides; and the best and only general rule that can be adopted is to keep those plants not in a growing state rather dry, for plants kept in sitting-rooms generally are over-watered; and it is not

an uncommon thing to see plants flourishing in the window of a dwelling under the care of an uninitiated individual, while those under the charge of others, in adjoining houses, only linger out a miserable existence, and which frequently is occasioned by the plants being kept standing in pans, into which the water is poured when the plants are supposed to require watering; whereas, whenever water is given, it should be gently poured on the top of the earth, in the pot. But as it is indispensable to have pans under the pots in sitting-rooms, small pans should be turned upside down within them, upon which to place the plants, and this precaution will prevent such water as may percolate through the soil from again reaching the pot in which the plant is growing; and all cultivators of window plants will find it by far the safest plan to give too little rather than too much water during the winter time, for the plants themselves will give notice when they are in much want of water by their leaves beginning to droop, while the effect of over-watering is oftentimes not discovered till the health of the plant has been seriously affected; therefore attention to this point is one of the most important in window gardening. It is, however, impossible to say how often plants should be watered, or how much at a time should be given them, as the same plant would require more or less according to circumstances; that is, in regard to the temperature of the room, and the degree of activity with which the plant may happen to be growing at the time. It must also be observed that the temperature of the water used in watering the plants should be at least equal to that of the room, and when the plants begin to grow in the spring, increase the quantity with growth and sun's power, keeping the soil at all times in a medium state of moisture. Many cultivators are quite unconscious of the injury plants receive by a sudden change from that state in which they have been long kept to one of an

opposite tendency—such as from drought to a bountiful supply of moisture, or from dark to light, such as placing plants out in the sun without their being first gradually inured to the light and air. Again, in winter, plants are frequently kept in too warm a part of the sitting-room, for they need not be removed from the window during frost, unless it be very severe, and then being placed on the floor near the middle of the room and covered with a piece of baize will suffice, as they will be safe where water placed beside them merely begins to freeze. Camellias, and similar hard-wooded and stiff-leaved plants, will even bear the soil in the pots being a little frozen; and frequently the cause of camellias losing their blossom-buds is from their being kept in too warm a part of the sitting-room in severe weather, and consequently in too dry an atmosphere. Finally, you must never let plants suffer from neglect. Many persons let them dwindle or die by forgetting to water them at the proper time, or shelter them from excessive sun-heat and frost. Again, without training and pruning, nothing is brought to the highest state of perfection to which it is capable, for cultivation is necessary in order to exhibit the good to which every earthly nature is susceptible. Therefore stopping and training must be attended to during the growing season, as well as repotting in the spring.—*Floral World.*

AMERICAN POMOLOGICAL SOCIETY.—The official report of the Eleventh Session of the American Pomological Society, held at St. Louis last September, is before us. It makes a volume of over two hundred pages, exclusive of the catalogue, is printed on good paper and in bold, clear type. In the value of its contents matter it is perhaps superior to any previous report; indeed, the address of the President, together with the essays of Meachan, Saunders, and Feudler, contain so much of valuable information that its possession should be had by every fruit-grower. The

reports from committees and individuals in various States are full of items of import, and we shall at a future time give extracts therefrom. To those who are interested in the progress of fruit culture in our Southern States, and the varieties best adapted there, this report contains very valuable and detailed information. Utah Territory and Canada are also reported from, giving us records of new fruits, and showing that not alone are the members of the old States alive to progress. The Treasurer, Thomas P. James, Philadelphia, has copies to supply all who choose to become members of the Society.

FRUIT PREMIUMS AT EXHIBITIONS.—Extracts from awards of premiums on fruits at horticultural exhibitions as recommendations of their value by interested dealers has become so general in use that it has come to be an abuse, which should either be at once checked by severe criticism, or else societies should instruct their committees in some formula of guidance toward prevention of the use of said committee's report without the fruit being every way worthy of the money, time, and labor of the fruit-growing public.

We have known three specimens of a new variety of fruit receive a first premium, because those specimens happened to be the best of their kind in the list exhibited, not because they were better than any other kind grown and perhaps known to the committee, but simply because they were the best at that time exhibited with which to compare. The report of the committee was then extracted from by dealers, and a nearly worthless fruit palmed on the public over the names of men as the committee no one of which could be got privately to speak of the fruit as at all worthy of cultivation. But what could they do? The society had no rule except to report on the best exhibited, and award the premium. The same sort of thing is being continually repeated, and yearly our fruit-growing novices are led into expense

of time, money, labor, and disappointment, when a little timely care in the preparation of restricting rules by societies for committees' observance would prevent it. So much has this come to be a part of some exhibitor's schemes looking forward to the use of the committee's report as an advertisement afterward, that we know of several good horticulturists unwilling to act upon committees, and often keeping away from the exhibition until a late hour from fear of being called upon to serve, and thus have their name and reputation erroneously placed before the public.

Now, in the season of exhibitions, when all are engaged, we call the attention of managers of horticultural societies to the subject, and ask of them, for the credit of their associations, the reputation of their fruitmen, and the great cause of pomology and general good of the country, to act at once either in some united rule—or each for itself—any way, we care not how, so that there be some stop to the use of a leading society's or a good, honest fruitman's name being attached, by means of an extract, to puff into sale any fruit not thoroughly known as of real value when obtained.

SCRAPS FROM MY NOTE BOOK.—*Thornless Raspberry*.—I know not what is the precise character of the Davison Thornless Raspberry, but I have one now growing in my ground, of the Black Cap family, the canes very strong, free of spines, and that ripens its fruit quite early. I hope to examine it with the Davison this year, when I shall know if it is identical. But a thornless raspberry is no great novelty, and unless the quality of the fruit is superior, I do not see that it has any great claim to cultivation.

Strawberry.—I have about fifty varieties, which I have been examining from day to day the past two weeks. Although *Ida* is condemned by one writer, and *Agriculturist* by others—*La Constante* praised by some, and others give preference to *Juncunda*—I think all have some good quali-

ties, but not sufficient to keep them long in general cultivation. Downer's Old Seedling furnishes me the earliest berries and the most quantity at a time; and although they are not very sweet, yet there is a rich sprightliness about them that I find my family all like, with the addition of a little sugar and cream.

Bottom Heat and Tomato Plants.—I have failed with tomato plants started in the green-house. The first start is all right, but they do not continue to grow, and when set out in the open ground grow beautifully less from day to day. I imagine bottom heat, not general temperature, is what they need, unless I could keep them up continuously to a high temperature until midsummer. Looking back over some of my old notes, I find similar results and experience years ago.

The Currant Worm.—I must watch daily and carefully for the first appearance of this destructive insect, and at once use powdered hellebore. Neglected it this year, and had my bushes nearly stripped of all their foliage. E.

ALTON (ILL.) HORTICULTURAL SOCIETY. VARIETIES OF APPLES, GOOD CIDER, ETC.—The reports of the regular meetings of this wide-awake Society always afford us items of valuable knowledge. The secretary will please accept our thanks therefor. At the meeting April 2d, we notice that Mr. Hilliard, after an experience of thirty-three years, recommends the following three as the best and most profitable varieties of winter apples for that section, viz.: Rawle's Janet, Gilpin, and Winesap. In planting on the level prairie, he plants shallow and plows up to the trees, so that they will be on a ridge and keep dry.

Mr. Hilliard makes the most of his winter apples into cider, and finds it the most profitable way of disposing of them. His practice in the making is as follows:

For good cider, late keeping, sound fruit is required; add two ounces of sugar to a gallon of cider, or five pounds to a forty-

gallon barrel. It will ferment better and be cleaner. Granulated sugar is best. It should be added as soon as the cider is barreled. As soon as it goes through its fermentation, say in eight days, it should be racked off from the sediment and put into the cellar. It should be racked off again in January, and sometimes a third time in the spring. Whisky barrels are best.

President Starr said, to prepare new oak barrels for cider or wine, use one pound of alum and four or five pounds of salt to four bucketfuls of water, heat boiling hot and put one bucket at a time in the barrel, rinse thoroughly, let it stand an hour, turn it out, and repeat the operation with another bucketful. Finally, rinse with cold water, and fumigate with sulphur, and it will be all right.

RIPE FRUIT A PREVENTIVE OF DISEASE.—Good old Doctor Kennicott, well known by a large number of our Western readers, used to say to us that in his practice of medicine he found his calls upon a family reduced in proportion as they came into the daily use of good ripe fruits, from strawberries onward; and it was with this practical knowledge gained from an extensive and daily ride over the Western rich prairie lands that he came in all his after essays, addresses, and writings to continuously and urgently advocate the use of ripe fruits as a daily food. Charles Downing, whose life held upon threads thirty years ago, and whose acquaintance at that time doubted his living from year to year, attributed his years of continued activity and usefulness in a great measure to the free and steady use of ripe fruits. Prof. J. P. Kirtland, in a medical practice of nearly half a century, says the habitual use of well-ripened fruits always assisted toward renovating, as well as continuing, the health of his patients; and from his knowledge thereof he has practiced and preached the extended and improved cultivation and use of all good fruits.

Understand, these men advocate ripe,

sound, healthy fruits; not strawberries mashed, jammed, and sour from long keeping; not early apples picked green in Tennessee or Kentucky, and yellowed in the box during transshipment; not peaches picked just as they are colored, and offered for sale with one side as hard as a stone and the other side almost rotten; not grapes which have molded in the package, and been washed off, trimmed, and made ready for sale by the dealer, who cares only for his money, and has no thought how big a fool you may be to buy them. No; all this kind of fruit does not come into the list which sensible men as we have named would use or advise; but it is the *ripe, sound, fresh* fruit, either direct from the vine or tree, or as near thereto as possible, which contains within itself food corrective and nourishing to the human system. Buy, therefore, and eat only of this. Use fruit freely at each and every meal; eat it before breakfast and with your meals; let the children eat when and as they will, but only of fruit *perfectly* sound and ripe; a rotten, specked, moldy, or half-decayed fruit is almost poison. If you buy or grow and eat really ripe and sound fruit, your health and that of your children will be advanced; but if you eat—no matter whether it cost you money or be given you—unripe or partially decayed fruit, you sow the seeds of disease that may exhibit growth in a night, and may not in months; but sooner or later the poor fruit will tell its tale in your blood and bones, with pains and aches, as the good will in vigor, activity, and general good health.

JULY THE MONTH TO PRUNE APPLE-TREES FOR THE NORTH AND WESTERN STATES.—We are aware that many advocate pruning in the spring, especially when increased vigor is desired to be given to the tree; but we confess that careful observation for many years has taught us that we really gain little on that score, and that in ninety-five cases out of every hundred we

induce a cankered diseased wound, a tendency to water-sprouts, or great increase of sucker shoots. Very late fall or winter pruning generally results in a wound that dries and cracks, and requires two or more years to heal over, and in extreme cold sections we believe renders the whole system of the tree more sensitive.

The month of July, however, is one in which the tree is making a rapid but healthy growth, with fully formed foliage to elaborate its sap, and a wound then made rapidly heals and is soon covered by the well-digested layers of new bark and wood which the tree is then in the natural course of its life increasing. Again, at this time the drain of foliage on the roots, in case of a little drought and by reason of the heat and rapid evaporation, is lessened by the removal of a part of the surplus foliage, and hence the whole health and life of the tree is increased and added to rather than lessened or rendered diseased as is the fact when spring pruning is practiced.

KENOSHA (WISCONSIN) HORTICULTURAL SOCIETY.—This young and energetic Horticultural Society bids fair to outstrip all the Eastern associations in their exhibitions. Their first show was on the 25th and 26th of June, at which a most extended and liberal list of premiums was offered, encouraging to the lovers of flowers and fruits, and retentive of character in the holding of the diploma of the Society as above money values. We tender our thanks for the introduction of our journal to the list of premiums. We shall use our best endeavors to make it of value to the recipients.

HARDIHOOD OF HOLLYHOCKS.—A correspondent suggests, or, rather, says, that we are wrong in classing the hollyhocks in our last number as perfectly hardy, because he says that "while young plants will winter perfectly, the second and third winter generally finds them all destroyed." Our reply is: the hollyhock propagates itself from year to year like the Alpine

strawberry, or other perennial, by offsets from sides of the main plant, leaving the center or crown plant to die out; and if these offsets are permitted to remain attached to the main plant, their exhaustion of the surrounding soil and consequent loss of vitality renders them less capable of enduring severity of temperature, and therefore death. If, however, the young plants or offsets be taken from the parent plant and replanted in good soil, from year to year, they are perfectly hardy, and will endure as much as the young seedling. We will only add, that a safeguard to old plants, whose center crowns have flowered and died, and are now dependent upon the support of the offsets, should have yearly a mulch of leaves or straw applied in autumn around them, which will, to some extent, answer the purpose of renewal by transplanting. The season of growth is however now about commencing, and we advise those who have old roots of the hollyhock to take them up, and separate and transplant them as early in the season as the ground will admit of being worked.

SWEET CORN.—Never forget to plant sweet corn in July. We always plant some each week in the month, and the result is we have it into frosty weather; and our last ears we cut up with the stalk and stack them in small shocks, to pull from even into December, near upon Christmas time.

LIQUID MANURE.—Any manurial matters can be, to a more or less extent, dissolved in water for the production of liquid manure, and the strength of the material used must regulate the quantity of water applied, and the nature of the plants to be fed with it. The following proportions, taken from the *London Gardener's Magazine*, are considered useful mixtures: One part by weight of fresh cow-dung to six parts by weight of water; stir, and leave it some hours to settle; use only the clear liquid. The drainage from the stable and cow-house is a most valuable basis for liquid

manure; add to it eight parts of water. The brown liquid that flows from new dung-heaps is to be used in the same way. One part of fowls dung to eight parts of water; sulphate of ammonia, half an ounce to every gallon of water; guano, an ounce to the gallon of water. In all cases it is best to give liquid manures weak, and especially at first. If it is intended to give a plant strong doses, a few weak ones should be given first to prepare it; but to be always weak is much safer and more beneficial in the end, for an overdose will cause the leaves to fall or become blotched, and do other injuries that need not be enumerated.

THE BEST STOCK TO BUD THE CHERRY UPON.—Considerable discussion has been had in the Western horticultural papers relative to the comparative values of stocks for working the cherry so as to insure hardy, healthy, and productive trees. The result of it all appears to confirm the views of Mr. F. R. Elliott, put forth some years since, that the *seedling* Morello is the stock on which to secure a moderate growth, with hardihood and productiveness increased. Morello suckers will, like Mazzard suckers, if used as stocks, continue to sucker, and while rendering the ground unsightly, reduce the vigor and health of the main tree. The Mazzard and Mahaleb both give too strong growth during the first two or three years, to render the wood of a sufficiently close texture to endure the severe and extreme changes of heat in summer and of cold in winter; while in the Northwest the roots even of both varieties are sometimes killed in winter.

PENSTEMONS.—Every lover of flowers should pay attention to the penstemon, as one of the best and most continuous in blooming of all perennials. It is of easy culture, and perfectly hardy. As we write (June 6th), we have before us in our garden blooms of one received under the name of *Grandiflora*, which is pure white, and with the fragrance of violets.

NEW SEEDLING CHERRIES FOR THE WEST.—We suggest to our Western fruit-growers, gathering the pits of Louis Philippe, Early Richmond, Donna Maria, Belle Magnifique, Hortense, and other varieties of like habit or class, and grow new seedlings. If only one in a thousand prove of great value, there is a prospect that two thirds of the balance will prove as good as the Early May now grown, and all will certainly answer for stocks on which to bud.

BLOSSOMING OF PEAS.—In our garden this season, out of fourteen varieties of peas planted the same day side by side, Carter's Early was the first to bloom and set its fruit; Waite's Caractacus was the second; while Little Gem and Dan O'Rourke were next, closely followed by McLean's Advancer. When we plant again, our choice will be for the first two and the last-named varieties.

BOOK NOTICE.

DELAWARE, THE GARDEN STATE OF THE UNION.—This is the title of a neat pamphlet of 62 pages, edited and published by Henry T. Williams, of the New York *Independent*. Mr. Williams last season spent considerable time in traveling through the State of Delaware and gathering facts concerning the adaptability of the soil to fruit culture, as well as the general resources of the State, all of which he has here given. The New York markets have, for years past, been mainly supplied with early peaches from Delaware; but it is only a comparatively short time since the attention of growers has been given to the cultivation of the smaller fruits, to which the soil and climate are so well adapted. Large profits have been realized by those who cultivate well, and it is only those who should undertake fruit culture even in Delaware. The pamphlet contains many items of information for those seeking a location for fruit culture, and to such we commend it. Price, 50 cents.

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CULTURE OF THE VINE IN EUROPE.

[CONTINUED FROM JULY NUMBER.]

STEMMING.

THE fruit having been gathered and selected, the next thing to do is to stem it. In "Medoc" and all the "Bordelais" this is invariably done. But in "Burgundy" and other districts they commonly omit it, and throw stem and all into the vat; if, however, the season has been bad, and the stems remain unripe, they are of necessity excluded in whole or in part, lest they do more harm than good. The chief reason for putting in the stems is to correct the disease called "teitter," for which the turrin acid, etc., of the stem is thought to be an antidote. Fortunately, we know comparatively little, as yet, of any wine disease, except acidity, but still it will remain for us to decide, upon experience, which of the two methods it is best to adopt. Probably we shall arrive at the same diversity of practice as is witnessed here. Stemming is usually done by rubbing the fruit upon a grating of iron rods, but the better way, decidedly, is a grating of wood. It is made of bars two thirds of an inch square, carved into each other where they cross, so as to bring them down to an even face, leaving openings or meshes two thirds of an inch square.

This is established like a table with four legs, with a rim around it about ten inches high, and a proper receptacle beneath to receive and carry off the stemmed fruit as it falls through and the juice which escapes. The table is four feet square and four feet high. About three bushels of grapes are put on to the grating, which four men with bare arms soon rub through, leaving the stems behind, which are then thrown into a small circular press, like our hand cider presses, which extracts the juice of the few grains remaining on them. In this way four men can stem enough to make fifty barrels of wine per day. For one who makes but a small quantity, a deep tub and a three-pronged stick will do very well.

CRUSHING.

This is next to be done, by trampling the grape with the naked foot. It is said to be a better way than to use a large mill, for the reason the mill will crush the seed; but the seeds are not easily crushed, and a properly made grape-mill need not bruise them in the least. At a well-managed wine-house, that of Messrs. Averons Brothers, in "Paulhiac," they put the grapes to ferment, with no further crush-

ing than what is given them in the process of stemming, which experience has satisfied those gentlemen is all that is needed.

FERMENTATION.

The crushed mass, with or without the stems, is next thrown into vats and allowed to ferment. The vats are large casks, generally without bulge, the largest at the bottom, and open at the top. In some of the large houses they are covered with loose boards; in others the boards are jointed and made hermetically close by plastering with cement or clay; in others there is merely a floating mass of stems; and in others there is no covering at all, except the scum of stems, skins, seeds, etc., which rise to the surface.

After the fermentation has ceased and the wine becomes clear, it is drawn off and put away in close casks, which in France are almost uniformly of the size called "barrique," holding about fifty gallons. In Burgundy these are kept above ground and in the light until spring, and then put into cellars, while in the Bordeaux country they remain in the light in storehouses above ground until one or two years old, and then removed to dark rooms on the same level. A careful way of making red wine out of grapes not fully ripened is to allow it to remain in the vats for a sufficiently long time after fermentation to let the greenness held in suspense settle to the bottom.

At "Latour," in the vintage of 1866, they allowed the wine to remain in the vat a whole month, though the fermentation was probably complete in half of the time. After drawing off the remaining undissolved pomace, it is pressed and made into a wine of inferior quality. It is common in France, and it would be sometimes necessary in some parts of America, to provide means of warming the wine-house up to at least 20 degrees of "Centigrade," or 68 degrees of Fahrenheit, as well as to introduce steam heat into the vats themselves, which is done by means

of a tin pipe, entering to the right of the faucet and a little above the bottom of the vat, bending to the bottom and rising again in the form of a letter U, and then passing out at the other side of the faucet, at the same distance from it, the steam entering at one end and the condensed vapor escaping at the other; but heat is only applied in cold seasons and when the grapes are badly ripened.

In France, the fruit of different varieties are commonly mixed together, and generally but little account is taken of "cesaye" (variety) as compared with the quality of soil. Well-informed persons, however, are disposed to complain of the introduction, which has been quite general of recent years, of coarse varieties grown for quantity rather than quality.

There is one variety of vine commonly seen on rich soil and deemed unfit for poor ground, except where grown for brandy, as in Cognac, that may possibly be of value to us. It is called "la folle" (the crazy) "en ragatt" (from enraged). Except in its infancy it needs no stakes, but holds itself erect by the strength of its stalk, which is trained about one foot high, and from which the cane or branches shoot out with great vigor, like those of the osier willow pruned low. Every winter all the branches are cut back to two or three eyes, and during the season the ground is cultivated in the usual manner, but further than this it demands no attention. There is no summer pruning nor any tying, winter or summer. It is never hurt by frost, is proof against all disease, and is unfailing in its fruiting, and yields, when in good condition, 1,200 to 1,500 gallons of wine per acre. Its most favorable soil is a sandy loam, and when grown on such, its wine, which is quite strong, is worth 40 cents per gallon. Of that produced about Bordeaux, a good deal is mixed with coarse red wine and made into claret for American consumption. Of itself it will not make red wine. It is possible that this hardy vine or grape will stand our severe winters, and, with or

without winter covering, obtain a footing in American soil. Generally it is a bad policy to introduce a coarse plant of any sort; but we have so vast a spread of land that is too rich for growing delicate wines, no matter what variety of plant is tried, and of late the mildew and rot have been so discouragingly fatal in many parts of our country, it might be well to give the "en ragatt" a trial, and, since we must drink the juice baptized with the names of "St. Julian," "Chateau Margaux," and all the saints of Medoc, we may as well enjoy the satisfaction and the very large profit of raising it ourselves.

Not only do the French mix different kinds of grapes in the vat and on the press, but they freely compound together different kinds of wine in every stage of maturity. This is done of course with great carefulness, and the success of the merchant in his business depending on his skill in concocting what will please the palate. Such combination may be agreeable to the taste of the consumer, and profitable to the merchant, but it may well be doubted if it is as good for the health as that which is simply natural, and made from one variety of grape.

A French vine-grower has introduced the Catawba into his vineyard, and uses its juice to mix in very small proportions with that of native grapes to give flavor. Any considerable addition of the Catawba's musky quality would be more than the French palate, trained to like only that which is negative, could very well bear.

When American wines were tested by the jury at the Exposition, the French jurors, whose scale was from one to four, with a zero at the foot, generally complimented our Catawba with a zero, and they remarked that the more of the natural flavor the wine possessed, other things being equal, the lower they should estimate it. In America the very contrary is known to be the case. The German jurors, accustomed to wines of high bouquet, held quite different opinions from the French, and

were much pleased with the American samples.

In regard to the more delicate wines of Europe which do not bear exportation, an important discovery is said to have been made by the distinguished chemist Pasteur, of the Institute, which is exciting great interest, and promises nothing less than to secure wine against disease and deterioration for an indefinite period, to enable it to be transported with safety any distance, and kept in any sort of storehouse. The best way to make known in America the discoveries of Mr. Pasteur would be to translate and publish his very valuable work, entitled "*Etudes Sur le Vin*," sold by Victor Masson & Sons, Place de l'Ecole de Medicine, Paris. Meanwhile we will give a brief synopsis of it.

After explaining at length the nature of the different diseases of the wine, acidity, bitterness, etc., tracing them all to vegetable parasites, and detailing his experiments in search of an agent to destroy the parasites, Mr. Pasteur arrives at the conclusion, that they are effectually destroyed by heating the wine up to a point between 50 and 65 degrees of centigrade, which would be between 122 and 149 degrees of Fahrenheit. The heating can be done in a "Bain Marie," that is, by placing the bottle or cask in a vessel filled with water and heating the water, or by hot-air closets or steam-pipes introduced into the casks. The heating should be gradually and carefully accomplished in order to enable any one to test the value of this invention, so important in its aims.

We extract the following, which gives all the author has to say on the mode he has himself followed with wine already in bottle, whether new or old, diseased or sound:

"The bottle being corked, either with the needle or otherwise, by machine or not, and the corks tied on like those of champagne bottles, they are placed in a vessel of water; to handle them easily, they are put into an iron bottle-basket.

The water should rise as high as the ring about the mouth of the bottle. I have never yet completely submerged them, but do not think there would be any inconvenience in doing so, provided there should be no partial cooling during the heating up, which might cause the admission of a little water into the bottle. One of the bottles is filled with water, into the lower part of which the bowl of a thermometer is plunged. When this marks the degree of heat desired, 149 degrees of Fahrenheit for instance, the basket is withdrawn. It will not do to put in another immediately, the too warm water might break the bottles. A portion of the heated water is taken out and replaced with cold, to reduce the temperature to a safe point; or, better still, the bottles of the second basket may be prepared by warming, so as to be put in as soon as the first come out. The expansion of the wine during the heating process tends to force out the cork, but the twine or wire holds it in, and the wine finds a vent between the neck and the cork. During the cooling of the bottles, the volume of the wine having diminished, the corks are hammered in farther, the tying is taken off, and the wine is put in the cellar, or the ground floor, or the second story, in the shade, or in the sun. There is no fear that any of these different modes of keeping it will render it diseased; they will have no influence except on its mode of maturing, on its colors, etc. It will always be useful to keep a few bottles of the same kind without heating it, so as to compare them at long intervals with that which has been heated. The bottle may be kept in an upright position; no mold will form, but perhaps the wine will lose a little of its fineness under such condition, if the cork gets dry and air is allowed too freely to enter."

Mr. Pasteur affirms that he has exposed casks of wine thus heated, in the open air or terrace, with northern exposure, from April to December, without any injury resulting.

Wine in casks may be heated by introducing a tin pipe through the bung-hole, which shall descend in coils nearly to the bottom and return in a straight line and through the pipe imparting steam. If, after thus being once heated, there is such an exposure to air, as by drawing off and bottling, as to admit a fresh introduction of "parasites," the disease thus introduced may be easily cured by heating a second time.

Mr. Pasteur claims also to have discovered and proved that wine can be advanced in ripening and improved by "aeration" conducted by a slow and gentle manner. This is a bold assertion; but such confidence is felt in the value of suggestions coming from him, that both of his methods, cutting, as they will, a tangle of old theories, will have a fair trial by his countrymen, and that without delay.

Your committee would say, in conclusion, that from what comparison we have been able to make between the better samples of American wines now on exhibition at the "Paris Exposition," with foreign wines of a similar character, as well as from the experience of many European wine-tasters, we have formed a higher estimate of our own ability to produce good wines than we had heretofore, and from our investigations in vine culture we are now more confident than ever that America can and will be a great wine-making country. All that is necessary for us to rival the choicest products of other parts of the world will ere long come with practice and experience. We have already several excellent varieties of the grape born on American soil, and suited to it a soil extensive and varied enough for every range of quantity and quality. Who would discover a patch of ground capable of yielding a "Johannesberger," a "Tokay," or a "Margaux," need only make diligent and careful search, and, somewhere between the Lakes and the Gulf and the two oceans that circumscribe our vineyard territory, will be sure to find it.

SUPPLEMENTAL REPORT.

The committee, since making their report on the third branch of the subject given them in charge, have visited the principal vine districts of Switzerland and Germany, and deem some of the observations there made worth being embodied in the supplemental report now submitted.

The vineyards to which attention was more especially given were those of the borders of Lake Geneva, those of Pfälz or Rhenish Bavaria, and of the banks of the Rhine, the Neckar, and the Main.

With regard to the quality of the soil, we have the same remark to make here as was made in the former report, viz., that the vines yielding the best wine were found to be growing on the poorest soil. Geologically, the soil throughout all the above districts is very much the same, viz., basalt and sandstone, both formations usually seen in close proximity, the basalt uppermost and resting on the other. The only exceptions were a few patches of limestone and slate. The basalt soil is esteemed richer than the sandstone, and is often hauled on to the other to enrich it. For instance, the vine-dressers of Durkheim actually manure their thin, poor, gravelly land with tens of thousands of yards of earth, brought from the neighboring town of Deidesheim, and yet the Durkheim wine is quite superior to that of their neighbors. All this was quite different from anything we noticed in France; there, calcareous rocks seem to underlie everywhere, nor could we learn of any wine of high repute in France that derived its quality from sandstone or basalt. The vine husbandry of the Swiss and Germans is of the first order. Nowhere do you see in their vineyards the straggling appearance so common in those of France (the effect of frequent layering); but the lines were always beautifully true and even. Although the intervals or rows were wide enough for the plow to pass, nearly all the cultivation was done by hand, and done most thoroughly, too. In France, as in

America, they stir the ground two or three times during the season. In the Rhinegan it is done four times; but about Forst Deidesheim and Durkheim they do it as often as every two or three weeks from the beginning to the end of the season. It is in the above neighborhood that basaltic earth is applied as a manure, as is also clay, to make the ground more retentive of manure; and this they do to such an extent that old vine fields are seen which have been raised visibly above the level of the others adjoining them.*

The expenditure of labor in a year on an acre of those fields amounts to about one hundred and forty days' work. In the Pfälz, it is usual to train upon horizontal laths or lines of wire running fifteen inches above the ground, very much as is done in Medoc, only that where wire is used, a second line is stretched above the other. Mr. Guyot, to whose book we have already referred, argues strongly in favor of everywhere adopting the method of training the fruit-bearing cane horizontal with the ground and very close to it. We ought, however, to note here, that the fields where this mode was more particularly noticed, or connected with good results, were in gravelly deposits of nearly level surface. Manure is freely used in Germany, much more so than in France and is prepared and applied with much care and system. *Cow manure*, largely composted with straw, is the only kind thought fit to manure vines. They sprinkle the heaps almost daily, to keep them moist and allow the mass to rot, at least twelve months before being used. It is applied every three years. As to quantity, it is

* Some years since the vineyard of F. T. Buhl, of Deidesheim, produced wine on the natural soil of a very inferior quality, selling at fifty centimes the litre, at a very great expense. The whole vineyard was covered to the depth of three feet by volcanic or basaltic earth brought from a distance of several miles. The experiment at the time was thought to be a very hazardous one, but the enhanced value of the wines after the addition proved that the owner was wiser than his neighbors.

certain that some soils, like the poor and unretentive gravel beds of the Pfalz, should receive more than those of the neighboring slopes, and that the calcareous earths of France need less than the sandstone and the basaltic earths of the Rhine valley.

Guyot, arguing strongly in favor of manure, recommends the French cultivator to put on at intervals of three years a quantity of manure that will be equivalent in weight to that of the fruit he has taken off at vintage; while Mr. Herzmansky, the steward at Johannesberg, who tills some fifty acres of vines, keeps about forty very large cows in his stables. *But will not manuring hurt the quality of the wine?*

In our former report we say that this is an open question as yet, and so it is in France, and Mr. Guyot treats it as such in arguing upon it. Of course no one will doubt that were a vineyard to be treated in this respect, as we treat the soil of a grapery, very poor wine would be produced, and the only question is, will a moderate quantity do harm? This is precisely the question the committee put to Mr. Herzmansky, the intelligent and thoroughly experienced director at Johannesberg, where the best wine in the world is made. His answer was, "No. As we apply it on this soil it does not impair the quality of the wine in any degree; on the contrary, it improves the flavor." Then he led the way to his well-ordered cow stables, and pointing to the compost heaps remarked, "There is the beginning of Johannesberger."*

* The vineyard of F. T. Buhl, alluded to in a previous note, is fertilized by a compost made of wood-ashes, stable manure, and earth. This is applied in the spring in trenches dug to the depth of about ten inches and again covered with earth; the application is made in this manner to every alternate row of the vineyard. The following year the same process is gone through with in the remaining rows, by the removal of the soil as previously stated, and the treatment of manure as just detailed; this vineyard now produces wine of a very superior quality of a delicious bouquet, rich in saccharine matter and alcohol, and possessing all those excellences that we prize in a first-class wine, and is now readily selling at twelve francs the litre.

Now, Johannesberger is the most delicate of wine, as it is indeed superlative in every respect. By the kind invitation of the Princess Metternich the committee were allowed to taste specimens of the best the castle cellar contained, including some that was 21 years old in the cask, and some from a cask that was, *par excellence*, called the "bride of the cellar," and the opinion formed was that the quality of Johannesberger is such that it can not be described, and can be communicated only to the organs of taste; nor can it be understood or even imagined, except by those who are so highly favored as to have a taste of it. But this marvelous wine is but the crowning product of the famous district of the Rhinegan, or that portion of the valley lying just north of Mayence, a strip less than ten miles in length, whose fruit yields a juice which surpasses all others of the world, combining richness with flavor and delicacy with strength. The soil of the Rhinegan seems to be of a red sandstone mostly, if not wholly. Johannesberg hill reminds one strongly of the soil of some parts of New Jersey and Connecticut; and in the neighborhood of New Haven, in the latter State, the "basalt" is seen resting upon the red-stone, just as it does upon the hills that skirt the Rhine. Nearly all the German and Swiss wines, and, indeed, nearly all the grapes grown in Germany and Switzerland, are white, for which the soil and climate of the former country seems peculiarly adapted, while at the same time unsuited for ripening colored grapes to the tint needed in a true red wine. The peculiarity of the better sort of Rhenish wines is "bouquet," and of the inferior sort, acidity compared with them; their French rivals are quite negative, and so are those of Switzerland. A French wine, white or red, must be very poor indeed if it shows any acidity, and must be very fine indeed if it possesses any easily-tasted "bouquet." Altogether, we must award the palm of excellence to the white wines

of the Rhine, as we do to the skill and industry of the vine-dressers who produce them. In considering the merits of the different soils as geologically distinguished from each other, we seem drawn to the conclusion that, so far as our observation has gone, the red sandstone is the superior one; but we confess ourselves unfit to make any such sweeping generalization, and will only say that the soil in question, for aught we can see, seems as fit as any other to grow a superior wine. The difference between wine made by fermenting the bruised grapes, juice, skin, pulp, and seeds altogether, and called "red wine," and that made by pressing immediately after gathering and fermenting its pressed juice by itself, called "white wine," is not a difference of color alone. For certain bodily temperaments, and for certain conditions of health, possibly, too, for the peculiar constitution of the German people, *white wine* may be the best. And to that of the Rhine country *Liebig* attributes the virtue of being an antidote for calculus and gout. But all this being admitted, the better reasons seem to favor the production and use of the red wine in preference to the white, where it can be done. The testimony we have obtained from the best sources of knowledge on this point amount to this:

Red wine is much less heating, much more tonic, much less exciting to the nerves, much less intoxicating to the brain, and its effects are more enduring than white wine. As we of America are, by reason of our dry climate, as well as from moral causes, more excitable, both from brain and nerve, than the Europeans, and at the same time much oftener in need of tonic diet, and our summer heats are so much more intense than in the wine latitudes of Europe, all the above considerations should have peculiar weight with us. So highly, at least, do the French people appreciate them, that they consume now little white wine, and it bears always a lower price in the market than red of

equal quality. To the general consumption of this drink intelligent Frenchmen are apt to attribute the fine health of their peasantry, as well as their habitual gaiety and habitual temperance. (The habitual use of *whisky* has quite another effect.) An American gentleman, for many years residing in France, and for a time a professor in one of the universities, affirms that the greatest longevity is among those people who take red wine three times a day and abstain from both tea and coffee. When Americans consult French physicians, three times in four they are ordered to drink red wine as an habitual beverage; and one of the commonest daily events among Americans residing in Paris is the cure of an obstinate dyspepsia by the same simple remedy, even in the unhealthful air of that city.

The German vineyards have hitherto escaped any very serious ravages from the "vine disease." It is met as often as it appears, and successfully combated with sulphur. Three applications are made, the first as soon as the berries have grown to be as large as the head of a pin. Early in the day, and before the dew is dried off, the flour is sprinkled on the lower surface of the leaves, where the moisture causes it to attach.

At Rheims we were shown a large vine, trained to a wall, one half of which had been treated as above in the spring of the year before, and the other half neglected. The latter had, as a consequence, lost all of its fruit, and we visited the place and saw it the following season. It showed yellow and falling leaves in July, and very little fruit, while the other portion was perfectly healthy, and was loaded with a good crop of fruit. This experiment was made by a French gentleman, who had recently returned from a long sojourn in America, and visited that country for the purpose of satisfying himself if the sulphur be really a preventive or not against the vine disease, of which he had heard so many doubts expressed while in America.

ARRANGEMENT OF FLOWERS FOR DECORATION.

BOUQUETS, WREATHS, ETC.*

FROM time immemorial, flowers have been used by all classes and all nations as commemorative of the happiest as well as the saddest hours of life, and their arrangement in varied forms, or appliance toward the decoration of the person, of halls, tables, the altar, and the tomb, have called forth much of mind, skill, thought, and study into creation of what may be termed artistic taste. By this we mean that perfect degree of art in which no art is visible; when everything looks so simple and so natural that it could hardly be imagined other than what it is. It is, however, a rare accomplishment, the art-

cally so beautiful that they can hardly be spoilt; and it often happens, that by mere accident, caused from haste or want of time for the arranger to dispose of them according to rule, that the flowers look really lovelier than would have been had



FIG. 77.

of arranging flowers gracefully and well, though, fortunately, flowers are intrinsi-

* Our engravings are copied from the circular of J. C. Schmidt, Erfurt, Prussia.



FIG. 78.

the systematic line and rule, which we designate as the art mechanical—not the art artistical—been adopted. Without any pretensions to ability to lay down laws and rules which should guide in the arrangement of flowers, we may say that one of the first and main points is to make a judicious choice of colors and their combination, as well as the size and number of the flowers, with reference to the place they are designed to fill. In the decora-

tion of the person, coiffures, or knots of flowers arranged upon the skirts of the dress, should have the flowers in accordance with the general color and style of the dress and ribbons with which they are to be worn.

Strong contrasts should be avoided, and yet any attempt to match the colors is not desirable, because unattainable, it being almost impossible to match the tints of flowers with colors of human dye. Much may be done, however, by avoiding any strong or startling effects of color, and seeking for soft and harmonious blending, bringing in those shades which soften and tone down color when contrasts can not be avoided. Cerise and scarlet flowers, for instance, look charmingly with white, but only when they have green to tone down the color. With black hair and costume light, flowers are very ineffective, while deep and rich colors light up and render the whole rich and beautiful. As the most of this article will address itself chiefly to ladies, we may be excused for

were not prepared to lay down fully any rules, and yet the mixing of too many colors is a rule always to be observed, as it never answers well. Let us take, for instance, shades of wool, not for working a flower, but to form a pattern; have we ever found crimson, brick red, scarlet, and pink to mingle well together?

The same rules that apply to dress and work in general will thus have also reference to natural flowers and to their arrangement, while practice in this will perhaps, more than anything, render the arranger an adept in the good disposition of shades and colors generally. The choice of flowers, although not always at control, yet if their adaptation be well understood, the effect of many a bouquet may be increased by the reservation of one single flower. For instance, fuchsias are graceful in a vase, where their natural graceful, drooping habit can be provided for; but in a hand bouquet their flowers drop so easily, and are so readily crushed, that long before the evening has passed their beauty is gone. Again, in the green for intermingling, old foliage will last much longer than that which is new or young; and again, the use of rose-buds and geraniums present a much more pleasing effect than full-blown roses and camellias, the last being only admissible when a distant view is to be had or some pattern or name arrangement created.

In the making up of bouquets, either for the hand or vase, it sometimes happens that flowers are used without stems; these are attached to small bits of wire, or tied by threads to small splints of broom corn or pasteboard strips,—the former the most readily obtainable and most in use; by this means a flower that is broken from its parent stem is used and placed in the position desired, and its base is sometimes supplied with soft cotton, or wool of a similar color, which, being wet, serves to keep the flower fresh a longer time than would otherwise be. The line-and-rule form of making the



FIG. 79.

entering upon illustrations which will be familiar to them. We have said that we

round bouquets, so much of late years in vogue, is so stiff and unnatural, so void of graceful outline, and generally so deficient in knowledge of harmony in color, that we rarely look upon one without its carrying us at once into association with the trade rather than beautiful in nature, so stiff and regular are the lines and circles drawn one around and below the other in enlarged but regular rotation. It needs but a glance at one of these

machine-formed bouquets, in comparison with one like the engraving here, to satisfy any one of the fact, that in the making up of flowers to produce pleasing results, something more than mechanical knowledge is requisite. We have had with us a number of gardeners, but never but one who could arrange flowers in a bouquet.

In our earlier days it was the fashion to use flat bouquets more than round ones,

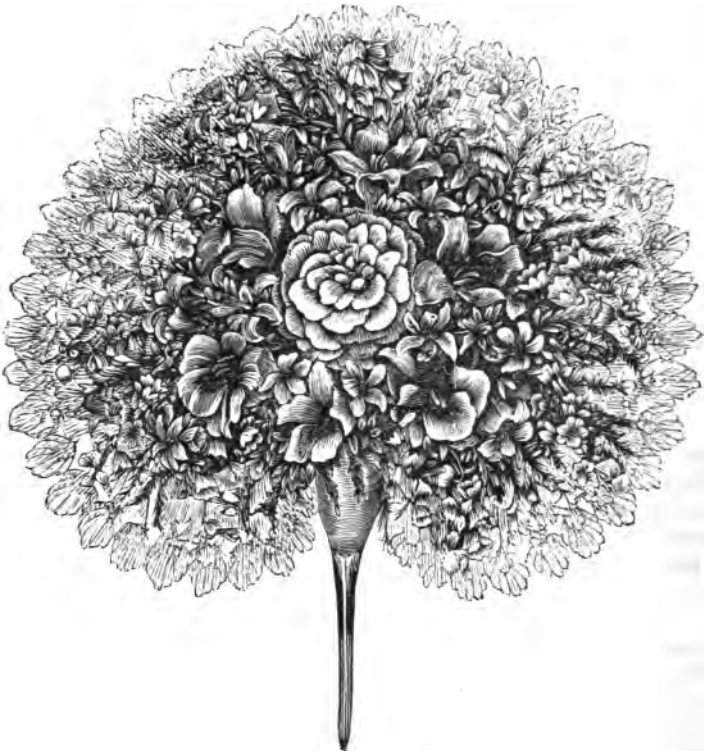


FIG. 80.

and we are glad to see the style again coming round, because it is much more convenient to carry, on account of the facility of putting it down without injury to the flowers. In former days we made the flat bouquets with backs of leaves, or sprigs of evergreen strung on fine wire and se-

cured to a strong main stem or handle, around and to which our flower stems were attached; but now lace fringes of paper have come in their place, giving a light, starry margin, that shows well at the same time that it requires less skill in arranging, because of this lace back cover-

ing readily what formerly occupied as much time to prepare as did the arrangement of the flowers. The accompanying figure, 80, shows one of these lace-backed, flat bouquets; while figure 81 exhibits a bouquet constructed more by form and pattern rule and intended for use as a fan. For ready construction of flat bouquets

frames of light wire are made, by having a stem, or rather two or four separate stems, with a space the size of a pen-holder between them, fashioning the outside circle or edge to the size and form desired by connecting from time to time with the main branches or stems, which again are brought together at the base and connect-



FIG. 81.

ed with a handle. Annealed copper wire, greened, is usually used, and by it and a little green thread a bouquet may be put together very quickly. In making up, begin at the center for the hand bouquet, and on the outside for the vase or basket, and, as we have said when referring to a single flower, the use of soft cotton or wool wetted thoroughly and laid in next

the base of a leaf or flower will assist in keeping it fresh a long time. We may renew this subject at a future time should our readers desire it, but for the present believe we have said enough, at least for hints to those who are disposed to practice their taste and cultivate a knowledge which only requires practice to perfect.



GRAPE-GROWERS' MEETING AND EXCURSIONS.—The Lake Shore Grape-Growers' Association will hold their summer meeting and excursion for the inspection of vineyards, commencing at Cleveland, August 25th, and continuing two or more days; embracing a visit on the first day (afternoon) to East Cleveland and Collamer, where are quite a number of very good vineyards, including that of Dr. Dunham, president of the Association. The second day will include a trip to Rocky River, Dover Bay, and Avon Point, where are quite extensive and promising

vineyards, showing skillful and successful management. On the third day it is probable a party will go on a trip to Sandusky and the Islands. This will be a most favorable opportunity for persons from abroad to come and observe something of the condition and prospects of grape culture in the Lake region. Free return tickets will be granted by the Lake Shore railroads to persons in attendance at the meeting. A programme of the arrangements will be sent on application by mail to the secretary, M. B. Bateham, Painesville, Ohio.

NOTES ON FRUITS IN THEIR SEASON—(STRAWBERRIES).

BY F. R. ELLIOTT.

ANOTHER strawberry season has come and gone, and hundreds of cultivators have met once again to consult, compare, and comment for or against varieties—the results of which amount to just about the same as heretofore, viz.: favorable report of this variety and unfavorable of that, without one word to the reader of the soil and cultivation which the commentator or grower gave to it. All this may be well, and I have no cause to say it would perhaps be better were these reports accompanied by some account of the kind of soil and the cultivation given by the grower; but were I intending to plant an acre of strawberries, and without knowledge of varieties, I do think it would help me in selection to know the soil and cultivation given to any one named variety spoken of as superior and as receiving a first-class premium as the best. I confess I have no faith in any record of a variety receiving a first prize by the showing of three or six berries, but look upon all such, and the dealers who gull the public by advertising them as new and very valuable, as direct impositions and humbugs derogatory to the cause and progress of horticulture, its honor and character. I suppose these remarks will not be agreeable to some speculators, and it is perhaps bad policy for any man to write aught except it be to the praise of all; but never having followed the “tickle me and I tickle you” policy, I can not now assume it. I have said I have no cause for saying it would be better were growers and speakers commenting on varieties, to tell the soil and cultivation given any distinct variety; because having in my own grounds a small bed of nearly all kinds, and passing many a day in visiting others, growing nothing for sale, but only for my personal study and family use, it matters not to me pecuniarily what

side is publicly uppermost. I have just—this 15th July—come from my bed of *Ida*, where I have gathered fruits firm, rich, and sweet, when from forty or more other sorts side by side in the same soil and cultivation I could not find a berry—and yet *Ida* has been condemned by some writers as unworthy of ground room. I have no doubt of the sincerity of declaration made by these writers, for they looked only to the money profit, and the fruit of *Ida* is too small to command high prices and ready sales side by side with many others; but if a man has a piece of light loamy or gravelly soil, and wants a fruit the plant of which is perfectly hardy, and with little or no cultivation will produce abundantly a rich, sprightly, firm, regular medium-sized fruit, borne on high foot-stalks all out of the dirt, ripening among the first and continuing to the last, then the *Ida* is one of the sorts for his purpose. For canning it is superior.

Nicanor is another that I have all confidence in; and besides being of value as a first and last berry of the season, its firmness, size, and quality make it a variety of great promise. I have, however, seen it only under two phases, viz., cultivated as a field crop and in the same manner as, and side by side with, *Wilson's Triomphe de Gand* and *Early Scarlet*, and in my own grounds, a clay loam, poor, so poor that corn could not be grown on it, yet it produced a good crop of good-sized fruit, firm, regular, and attractive. I advise its trial, and believe if grown in good rich soil with extra care, it will repay and prove the truth of its name and signification, viz., *Conqueror*.

Green Prolific has not, with me, this year proved up to its former mark, but my bed was of two years, and in a poor gravelly soil, without manure. I have reason to

believe, however, that those who have spoken in its favor have done so honestly, when they have said it was prolific, of good size, rather late, and somewhat too soft for market, but of great value as a family sort.

Mead's Seedling has a peculiar flavor, is of good, fair size, a tolerably productive sort, desirable if you have plenty of room, but of no use for market in any soil, and not specially desirable as an amateur sort. Belle de Bordelaise, Princess Royal, Emily, and a host more of sorts, are of fine flavor, good size of berry; but they produce so little that it is not worth the trouble of cultivating them, except for the purpose of seeing and knowing how many humbugs there are in this world of horticulture. Napoleon III., Tillip's Rival Queen, King Arthur, Jucunda, La Constante, etc., are all sorts that in deep strong soils, clay loams, and under high cultivation—that is, kept from making runners, and annually manured, mulched, etc.—will give large crops and a majority of large-sized fruit; but the stools must be renewed every second year, or the crop will hardly be worth the labor of keeping clean. In this class Dr. Nicaisse produces a few of the very largest berries, unequaled by any other variety, so that if a premium were to be awarded for six of the largest berries the cultivator of this variety would win. Jucunda and Napoleon III. are the next, so far as both size and productiveness compete. Triomphe de Gand stands next for size and productiveness, and at the same time has a flavor that, by some, is highly esteemed, and by others regarded as unbearable. La Constante is rich in flavor and of good size, but it is not as good a bearer as Tillip's Rival Queen or King Arthur, yet its superior flavor will always keep it in the list of an amateur gardener having soil of a deep rich clayey nature. It's of no use growing any of these sorts in light sandy or black mucky land. Longworth's Prolific, on some deep rich soils, continues one of the very best and

most profitable sorts, good for market or table; but the same sort in light soils, and as a rule throughout the country, is not profitable, although by all acknowledged of good quality and specially fine for canning. Agriculturist has a few friends who grow it for their family use, but, like Russell, it is too soft for market. Victoria, Methven Scarlet, Ohio Mammoth, Austin, and a host more of that stripe, produce a few large berries, handsome to the eye at a distance, but they are all hollow and tasteless on near acquaintance. Burr's New Pine was a superior-flavored berry, small, but a good producer for an amateur garden. I have no belief that it is now in existence, although some advertise it. If any one has it true, I will pay a dollar a plant for a half dozen plants.

Lady Finger and Downer's Prolific are two more amateur sorts, productive early and continuous bearers, but not to the amount that gives most pecuniary profit; and while I would be unwilling to do without them for my family use, I should throw them both aside were money my only object in growing the strawberry. It's of no use talking about sorts that are universally the most profitable when we leave out Wilson, for while Dr. Hull will grow only Longworth's Prolific, Evans & Co. are successful with Napoleon III.; and Knox, of Pittsburg, with the Jucunda, nets a pretty little income of some \$15,000 a year therefrom; yet the great American people are ruled by the universality of the success of Wilson everywhere. It's sour, we know—but sugar is cheap; and while a few can buy other varieties at fifty cents a pint or quart, the people must and will be fed by the people, and Wilson, until we know and prove something to equal it, everywhere will continue the people's berry.

New seedlings have made less noise this year than usual, so far as personal observation has made me cognizant. The best ones I have tested are Kramer, which is a very deep dark red berry, of a good size,

pretty firm, and a rich flavor. It has produced well, but I must try it another year before saying more in its favor. Another new sort, a seedling yet unnamed, I received from Luke Bishop, of St. Thomas, Ontario, Canada, has borne me a few berries, and promises superior excellence, but I fear will be of the class of *Triomphe*

de Gand, etc., and only prove of value under certain conditions.

Charles Downing, for plants of which I am indebted to the originator, J. S. Downer, Esq., has not grown well, although the plants were strong when received, and have had extra care because of my respect for the name.

IS STRAWBERRY CULTURE A SUCCESS?

BY HENRY T. WILLIAMS.

WITHIN the last three years berries have brought extremely good prices, and berry growers have made goodly sums of money. Instances of good fortune have frequently come to light, passed around the neighborhood, and finally reached the newspapers, detailing the large sums made from one or a few acres of ground. The figures are large—\$500, \$700, and \$1,200 per acre. The prices per quart range from 25 to 50 cents. The attention of readers has been excited and their hearts have been inflamed with the desire to gain those goodly hundreds of dollars. The papers tell him the cultivation is easy, the plants are not costly, that the occupation is desirable, the supply not equal to the demand, that the markets can never be glutted, that population is increasing faster than cultivation, and growers may always rely upon good remunerative returns for any kind, and there need be no fear of failure.

The present unsatisfactory strawberry season of 1868 will be a lesson to old cultivators, and a warning to new ones, for some time to come.

The strongest arguments used to influence the settlement of South Jersey and other points have been the so-called ease of berry culture, their prolific yield, and great demand in the cities for fruit, with the promise of good prices. Thousands have gone thither to engage in the business. Each year has witnessed a great increase of their number. In like manner,

the area devoted to fruit culture has rapidly increased, until this spring the result is manifest in a perfect flood of berries upon our markets from all directions.

Norfolk growers, favored with cool weather for transportation, have sent hither thousands of quarts in indifferent condition, selling first for \$1 per quart, and declining rapidly to 30 cents, and still less.

Delaware berries came in first for 60 cents; then fell to 40, then 20; a rain-storm of four days' duration mashed and ruined thousands in the fields, and the balance were sold to canners for 10 cents per quart. But we have no words to express our astonishment at those from New Jersey. Commencing at 20 to 25 cents, the floods of poor, small, inferior fruit, shipped in all sorts of indifferent baskets, rapidly declined to 15 cents; and the majority hardly realized 10 cents per quart net.

Vineland sent 250,000 quarts per week; Hammondtown, the same; Burlington, thousands more per day, and other points too numerous to mention sent their thousands also. Good fruit and poor fruit all shared alike—all went cheap. Keyport berries, better than any Norfolk ever sent, went under our eyes for 15, 10, 8 cents,—anything the buyer might give. Peddlers reveled in perfect bliss on the increased amount of fruit for their wagons and the cheap prices.

Growers have footed up credit and debit. Some have made an \$100 per acre; others,

to our knowledge, show \$100 on the wrong side. At last the unwelcome truth forces itself upon our minds, "*Strawberries are overdone!*" The season of 1868 in this city is a perfect failure.

Like accounts reach us from many of our inland cities. Growers say berries sold so cheap, it left no profit. Ten cents a quart hardly pays for the trouble and care. One man reports a profit of \$4 on two acres. Others let their berries rot sooner than pick them. We doubt not hundreds of acres will be plowed under by disgusted owners, and devoted to something of more permanent culture and profit.

One season's experience is sufficient to convince a majority of growers of their unfitness for the pursuit. The lesson is hard, and they come to common sense at last.

The key to all this ill-success comes simply from neglect and inferior culture, rather than over-supply. Strawberry growing is like hundreds of other occupations; if men wish to be successful, they must do *everything well*. First-class plants of paying varieties must be chosen; cultivate them well and thoroughly; do not take too much ground;—an acre or two well cared for is better than five or ten negligently attended to. The fields must be hoed often—kept clear of weeds. Mulch must

be used during the winter and the hot days of summer. Fruit must be assorted after picking, and only the best sent to market. No cheap baskets or crates must be used,—only good strong permanent ones will answer. Attention like this will never fail of paying a good profit; and when once a grower's reputation is established, his fears are at an end. There will be plenty of customers who will stick to him through every variation of the market.

It has become a settled conviction among buyers in this city, that the best and most valuable berries here are those which come before "Jersies" arrive, and those which come after "Jersies" are gone. It is as much of an object for growers near New York to raise late berries as early ones, because the prices are more steadily remunerative.

The prospects for the future are not flattering. This spring has witnessed the planting of hundreds of acres by new cultivators and candidates for public favor, and without doubt the next spring will show a state of things much worse than this year.

I would not discourage fruit-growing, but the facts are too apparent that, except in special and favorable instances of location, culture, and customers, strawberry growing as now done for the general market is no longer a sufficiently paying thing.

LIQUID MANURE.—We believe there is no system of enriching the land for small gardens, with a view to perfection of crops, so truly economical and so easily available as that of using liquid manure. We occasionally hear of a gardener, or an amateur grower of some special plant or crop, that has practiced enriching with liquids, but it is only occasionally; yet the result of every record is in its favor, and a searching inquiry into any extra production of fruit, flower, or plant almost invariably gives watering with liquid manure as the cause. There is in almost every family waste of liquids, which usually go into the sewer—drain, or possibly upon the road,

where they are no avail, but if saved, by being conducted to a tank, would enrich the entire garden spot of vegetables, small fruits, furnish stimulus to the rose and other flower borders, and keep the grass plot green and fresh even in the hottest and driest weather of midsummer. The use of a little plaster (gypsum) occasionally, thrown in and around the tank, would always keep it sweet and clean. By the use and practice of liquid manuring no delay need ever occur in planting-time because of the manure not being on hand, or not being in a sufficiently rotted condition; but planting could proceed, and the application of manure be made at leisure.

THE MARENGO CRAB AND OTHER APPLES FOR EXTREME LATITUDES.

SINCE the appearance of the May number of the HORTICULTURIST I have been besieged by a fresh batch of inquiries concerning the Marengo Winter Crab, occasioned by your article on "Apples for Extreme Northern Sections." By that prompt and impartial notice of this new fruit you have, in my opinion, placed the people of the Northwest under obligations which they will not fail to remember. To men in the more favored fruit latitudes of the East, it may seem strange that an extensive region, already embracing several millions of people, should possess scarcely a single variety of the apple that can be relied upon as entirely hardy. Yet, judging from articles in Northern journals, none except the Siberian Crabs have fully stood the test of our late winter. Draw a line due west from Chicago to Nebraska, and it will be found that such apples as the Jonathan, Gilpin, and Fameuse, are not generally hardy north of that line. They are not perfectly so at this place, a point that has gained a reputation for growing more varieties of apples in perfection than any other equally far north in the West.

I do not wish to be understood as saying that these varieties, and many others, are not grown to a great extent north of that line, but that there are seasons in which all of them totally fail from the effects of the climate, and sometimes the trees themselves are seriously injured or killed outright, while the Siberian Crabs uniformly bear heavy crops, and are never injured from climatic causes, even in the most extreme northern limits.

You will thus see that, according to the terms of your own estimate, the Marengo Winter Crab is worth ground room, not only in the extreme north, but over the whole of that extensive territory known as the Northwest, a section destined to become, perhaps, the most populous, as it

is now the most enterprising, portion of our country.

A variety that will supply, with *certainty*, the want of this vast region for a first-rate cooking, and even a second-rate eating apple, during the whole winter season, can not fail to become one of those sectional blessings which it is so praiseworthy to promote. We have but to consult Northwestern journals to notice the perfect *furore* for the few varieties of fall and summer apples that have proved hardy there, such as Tetofsky, Duchesse d'Oldenburg, and especially the Transcendant and Hyslop Crabs. The Marengo Crab combines the perfect hardiness of the latter with nearly all the good qualities of the former. For the kitchen, its luscious cooking qualities are decidedly superior to either, and it is probably not inferior in eating flavor to the Duchesse or Ben Davis. In beauty and productiveness it has no rival. Added to this, it can be kept till late in spring, while it is in prime condition for use in early winter.

In bringing this new variety thus early into notice, through the columns of the HORTICULTURIST, you have entirely transcended my expectations; indeed, I should not have chosen to publish a description of the specimens sent you, as they were the very last and smallest of a lot which had been used all winter for exhibition, and had been, I think, frozen at the meeting of the Northern Illinois Horticultural Society in February last. Your outline could not, therefore, have done full justice to the *size* of the variety; nor could the constant handling and transportation have preserved its juices and flavor to fully attest its excellence, beauty, or keeping qualities. Specimens are now growing which I hope to submit to you with different results as to size and quality.

The apple crop is almost a complete

failure here this season, from injury done to the buds in winter. The trees bloomed imperfectly, but dropped their fruit, while not a Siberian Crab that showed blossoms but is now loaded with fruit.

Yours truly,

C. ANDREWS.

MARENGO, ILL.

[*Remarks.*—The writer of the article descriptive of the Marengo Crab desires us to thank Mr. Andrews for his compliments, and to say that in giving account of the fruit, his object was simply to draw the attention of fruit-growers at the West to this as a new fruit, and, like other new

sorts, deserving their attention and careful examination, comparison, etc., relative to its future permanent value. It has ever been the aim of the *HORTICULTURIST* to notice all new fruits, as well as to comment on old varieties, with a view to careful selection for the masses to cultivate; and our Western readers and fruit-growers may rely upon our journal as one largely supplied with information from the broad prairies and fruit sections of the West. We have a large number of correspondents regularly keeping us posted, and from whose letters we constantly glean valuable items for our readers.—ED.]

EVERGREENS LOSING THEIR FOLIAGE.

It is safe to say that cultivators, as a rule, know little or nothing of the capabilities of evergreen trees and shrubs to renew a loss of foliage or recover vitality when, through some careless handling or extreme winter's cold and winds, their leaves have been destroyed and fallen. The Mahonia is almost always denuded of foliage when exposed to winter suns, or in positions where cold, cutting winds sweep over it; but it almost invariably renews its foliage with the spring vegetation and blooms at the regular time. The rhododendron goes through the same course, with similar results, although not as common to be seen, because most growers of it are instructed to place it in positions sheltered from southern suns or severe winter winds. A fine specimen of the rhododendron *maximum*, in the grounds of one of our friends, stands on the north side of his house, and although shielded from winter suns, yet has to endure severe blasts of wind. Entirely unsheltered from the north, this plant has for years almost regularly been denuded of much of its foliage, but it puts it on again with renewed spring growth, and blooms regularly and abundantly. An-

other friend has an English yew standing in a similar position, which often in early spring presents almost the appearance of a deciduous plant, yet it soon becomes clothed with foliage, and yearly makes a regular growth. Some time since one of our friends received a quantity of kalmias; from some cause they cast their leaves, and although our friend regarded them as dead, yet, as they came from a friend, and he himself was anxious to grow them, he planted them carefully in a shady position and mulched the ground with leaves. In a short time he noticed buds, and soon new leaves, and now, as we write, they are well clothed with foliage.

Years since, before railroads were known at the West, a gentleman (Col. Simon Perkins) in Akron, O., received late in summer a barrel by canal. It lay in the warehouse several days after reaching its destination, and when opened was found to contain a quantity of balsam firs, all dry and without any special packing. He—supposing they came from some friend who might hereafter inquire about them—the Colonel, tried his hand at saving them, although he considered them quite dead. He first immersed them in

water, soaking them, tops and roots, until the latter were pliable, and then he carefully planted them out, saturating the ground thoroughly with water and then mulching. In the autumn he noticed the buds were green, and the next spring they pushed into leaf, and are now large and beautiful trees. The Norway spruce, the

hemlock, and sometimes the white pine has the foliage destroyed on the ends of the branches, on the north and west sides, by cold, harsh, cutting winds; but they almost always renew them, and it is rare that we have found it necessary to clip back on that account.

STRAWBERRY, FLORAL, AND VEGETABLE EXHIBITION.

THE New Jersey State Agricultural Society held their first exhibition of strawberries, flowers, and vegetables on their own grounds at Waverly, on Tuesday and Wednesday, June the 23d and 24th.

Owing to the unprecedented wet weather, during the spring months, many horticulturists were prevented from taking an active part in the first effort of the State Society in getting up an exhibition that would reflect credit on the Society and benefit the producer. In some sections of the State the incessant rain, during the period while the vines were in blossom, materially lessened the crop, both in quantity, quality, and size, which deterred many who would otherwise have taken part in the exhibition. Notwithstanding these drawbacks the exhibition was most creditable, and I have seldom witnessed a finer display of berries than were on the tables. The large concourse of people that visited the grounds during the two days of the exhibition were most agreeably disappointed, amused, and instructed on examination of the articles on the tables.

The exhibition was held under a large tent (80 × 125), on a beautiful position, commanding a fine view of the surrounding landscape, which is singularly novel and picturesque. A full band of music was in attendance, which added very much to the pleasure of the visitor.

The articles on exhibition under the spacious tent were arranged with a desire

to produce the best effect, and still place the plants, berries, and vegetables where they could be closely examined by those anxious to do so. The three departments were creditably represented, and a number of single and choice specimen plants were sent by private individuals with a desire to assist the officers of the Society in making the show an attractive feature, with a hope that the Society would feel that they would promote the rapidly growing horticultural interest of the State by holding a well-managed strawberry exhibition every year.

Among those who sent collections of specimen plants were Amos Clark, Jr., State Senator, and John Hutchinson, of Elizabeth; Mrs. T. B. Peddie, Henry Bird, James Galbraith, and J. J. Harvey, of Newark. Thomas Cavanagh, of Brooklyn, sent a beautiful floral design and a handsomely arranged basket of flowers, both of which were awarded first premiums. There were several large collections of cut flowers from different parts of the State, which made the floral department very attractive. The display of strawberries was certainly very fine, and called forth high praise both from professional growers, amateurs, and consumers. There were an unusually large number of exhibitors, and the large size of the fruit of every variety gave evidence of careful culture. Nearly all the old varieties were well represented, and there were so many promising seedlings on the

tables that the judges were puzzled in giving their decision in favor of the "best seedling not before exhibited."

Among those who exhibited seedlings were John Brill and L. C. Winans, of Newark; E. Durand, of Irvington; Elias Canfield, of Waverly; D. D. Buchanan, of Elizabeth; and J. H. Foster, of Ulster County, N. Y.

Mr. Brill's No. 10 gives promise of being a fine berry. E. Durand's Seedling, "Black Defiance," was awarded the first premium as the best seedling not before exhibited. Elias Canfield's Seedling, "Wax Berry," was spoken of highly by the judges. Romeyn's Seedling was awarded a special premium.

Reisig & Hexamer, of Newcastle Westchester County, N. Y., exhibited fifty varieties; Francis Brill, of Newark, twenty varieties; E. Williams, Mont Clair, sixteen varieties; P. T. Quinn, sixteen varieties; John Crane, of Union, ten varieties; William H. Goldsmith, six varieties; Amos Clark, Elizabeth, eight varieties; F. W. Woodward, Rutherford Park, eight varieties.

Among those who exhibited from three to six varieties were Gen. N. W. Halstead (President of the Society); Benjamin Haines, Elizabeth; Francis Newbold, Harrison; Joseph Quinn, L. C. Winans, and J. Hayes. There were several plates of Boyden's No. 30 on the tables, and in every instance this berry was spoken of in the highest terms.

Mr. Schenck, of Irvington, exhibited the

plants in fruit, and also two quarts of the berries. Mr. S.'s fruit were largest on exhibition, and deserve a special notice.

The season being at least three weeks later than usual, the display of vegetables from the State was not as large as it otherwise would have been. Francis Newbold, of Hudson County, an energetic gardener, made a fine display of well-grown vegetables.

However, the deficiency from New Jersey was liberally supplied from South Carolina. B. J. Quinn & Brothers, from James Island, S. C., sent on a large and choice display of vegetables from their "truck farm," which made one of the most attractive features of the exhibition. There were twenty different varieties of vegetables in this collection, and taken separately or collectively they were most creditable to the growers, especially as they were raised on land that previous to the war produced nothing but cotton.

Fuller & Parsons, of Newark, exhibited their "Patent Berry Basket," with crates, and were awarded the first premium.

I now use this basket for marketing small fruit the present season, and I am fully satisfied that it is the best basket that I am familiar with.

Although this was the first attempt of the State Society to hold a strawberry exhibition, the results were satisfactory, and so encouraging that the officers feel quite confident that such an exhibition here each year will promote and stimulate the horticultural interest of the State. P. T. Q.

THE OPINIONS OF MY NEIGHBORS.

BY FRANK AMON.

I HAVE been lately among my neighbors, getting their views of cherries and strawberries; and as they are most of them good practical money-gaining growers, perhaps what they have said to me may be as interesting to some of the readers of the *HORTICULTURIST* as it has been to me.

My neighbor A. says that in the cherry trade his Rockports gave him a good return. He picked and marketed them before they were really ripe, but yet they were quite good and sold at a good price. His Gov. Woods all rotted, and so did the Cleveland. Elton was almost as good

a success as Rockport, while the Red Jacket matured well without rotting, and was with him a success. Neighbor S. had a tree or two of Purple Guigne that matured without rotting, and so did his Archduke. He is strong, therefore, in favor of these two sorts. Again, neighbor P. talks favorably of his old list, before named, viz., Early Purple Guigne, Rockport, Red Jacket, and Louis Philippe; but neighbor J. comes in strong in favor of Old Black Heart, which he says this year netted him more money than any of the other sorts. He is down on all the light-colored varieties. After all, cherry growing, owing to rain-storms at period of blooming, the stinging by curculio, and decay just before full maturity, is in my section coming to be a doubtful item as regards profit—and yet neighbor E. has some seedling cherries that ripen a week or more later even than Red Jacket, and from which he gathers ripe and sound fruit. He says that it is possible as the trees grow older they may exhibit the same tendency to decay of named varieties, and therefore he will not at present note them to the public.

Neighbor E. has a great aversion to anything like humbuggery in the horticultural line.

As for me, I have been looking at all this cherry question, and while I am unwilling to give up the good-named sorts, I really believe some guardian spirit must come in shape of a remedy for rot, or we can no longer count on growing either sweet or sour cherries as a profitable crop. This year my Kirtland, Morello, Louis Philippe, and a quantity of seedling Morellos were all so much stung and rotted, that I have gathered but a tenth of what ought to have been my crop. So much for cherries; and now to my neighbors' views on strawberries.

Neighbor A. is a strong advocate for Wilson, and next to that, Hovey. He says on his sandy loam soil the Wilson is the only berry that will pay him pecuniarily

to grow. He likes Hovey for its firmness and size, and having tried Triomphe de Gand, Russell, Jucunda, Victoria, and a number more of the same class, says none of them compare with Hovey. The old Early Scarlet, he says, is like Metcalf, not worth ground room. He grows his vines in rows, plants about one foot apart in the row, and the rows about two and a half feet distant from each other. After the winter has fairly sat in and the ground is frozen solid, he spreads over the entire ground about two inches in depth of well-rotted manure, and I can only say that whether it be a good or bad course, his crop is always good.

Neighbor S. last year was strong on Jucunda; this year his crop, in hills, well mulched with tan bark, has been a failure. Wilson and Green Prolific have been his best sorts, and Agriculturist next. Not willing to give up Jucunda, he has planted in a piece of new ground, a rich, well-drained, strong clay loam, and from it I hope next year to report favorably. I shall certainly be able to do so, if good culture and soil will give good returns to that variety in this climate.

Neighbor M. last year went in strong on Metcalf, buying by the thousand, and acknowledges it has not come up to expectation. He is a nurseryman, but don't take any but a local agricultural paper, and rarely reads even that. A good, quiet life is a good thing, but I for one don't believe in living about half a dozen years behind the rest of the world.

I have had a good chance to see what my neighbors have done, and now for myself. My best early crop was from Downer's Prolific; my best-sized berries were from Triomphe de Gand and French Seedling; my best flavored were Lennig and Lady Finger; my longest bearer was Ida; my most pecuniarily productive was Wilson. My soil is light gravelly sandy loam, and not well manured. I grow in rows of about one foot wide, leaving about three feet space between. I don't mulch, nor

can I lay any special claim to good cultivation, but yet I get pretty good crops of fruit. I sometimes think, when I have fruit and my neighbors none, that I have either good luck on my side, or else—

I see one of your subscribers wants to know who I am. Well, I'll tell him. I am an old fellow that has many years tried to learn something of horticulture, but as the years roll on, I often think I am repeating matters much as a clock does the hours of the day, for I read an item, then memory brings up something in connection, and I look back over some old notes and volumes

and find the world had some brains developed years since; nevertheless as new brains are grown, it is not always best to tell them they are like the old ones, but perhaps wise to keep with them, and while touching them with a little of the old leaven, possibly a new spark hidden for ages may spring forth and give light and life for the benefit of all men. Let us work and hope, trusting and believing while we enjoy. If your subscriber wants to know more of me, you can forward me his letter, and I will cheerfully respond.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

VARIEGATED ZONAL PELARGONIUMS.—At the June show of the Royal Horticultural Society, the *Cottage Gardener* says:

The subscription prizes for Variegated Zonal Pelargoniums excited much interest among exhibitors, and they brought a multitude of varieties, many of them very nearly approaching each other, but between which the shades of distinction were infinite.

In Class 15, for the best Golden Variegated Zonal Pelargonium not in commerce, Messrs. E. G. Henderson were first with Mrs. Grieve, a splendid variety, with large leaves having a broad, dark crimson zone and a distinct yellow edge. Mr. Stevens, of Ealing, was second with *Achievement*, also splendid, having a crimson and nearly black zone and a narrow, yellow edge. Messrs. Carter were third with *Ettie Beale*, with a bright and dark crimson zone, green center, and regular yellow margin, a very pretty variety. Mr. Mann, of Brentwood, was fourth with *Masterpiece*, having fine large leaves very

well marked. Messrs. Lee, Turner, Grieve, Tanton, F. & A. Smith, Garaway, Saltmarsh, and E. G. Henderson also exhibited in this class, and some of their varieties were also fine.

The best Silver Variegated Zonal not in commerce came from Messrs. Lee, of Hammersmith, and was named Mrs. John Clutton. It has large leaves with a fine white edge, and a dark zone with fiery markings. Mr. Grieve, Culford Hall Gardens, was second with *Lass o' Gowrie*, having a broad, white margin, and a rosy crimson and dark crimson zone, a finely-marked variety. Messrs. Carter were third with *Princess Beatrice*, having a broad white margin surrounding a dark crimson zone, with flushes of bright crimson. Mr. Turner, of Slough, took the fourth prize with *Miss F. Stevens*, with a finely-marked dark zone flushed with rose.

For the best Gold and Bronze Pelargonium not in commerce, Messrs. F. & A. Smith took the first prize with *Criterion*, a magnificent variety, having a rich, deep

brownish red zone, which, as well as the golden margin and center, is very regular. The same firm was second with Arab, having a broader margin and a somewhat greener ground color, but with the zone very rich and distinct. Mr. Turner was third with Mrs. Simpson, also a handsome variety, but not so regular in outline; and Messrs. Lee were fourth with Lady Farnham, with a broad, reddish brown zone and distinct yellow edging.

The best Golden-leaved variety not in commerce was Golden Emperor, with large golden leaves, with a slight tinge of the palest green, and very beautiful. This came from Messrs. Downie & Co., and the second prize went to Messrs. Saltmarsh for Golden Queen, with pale golden leaves, scarcely less beautiful. Mr. Keeler, of Lewisham, was third, with a kind also called Golden Queen, and Messrs. F. & A. Smith fourth with Golden Gem.

In the next class, for the best Silver-edged Pelargonium not in commerce, Mr. Turner was first with May Queen, with a fine pure white margin, and apparently of free habit of growth. The second prize went to Mr. Turner for Bright Star, also an excellent variety; and the third to Messrs. E. G. Henderson for Bridal Bouquet, with a leaf flatter than most others, and broadly edged with white.

The next class was for the best three Golden Variegated kinds not in commerce, and in this the first prize went to Messrs. Carter & Co. for Sir R. Napier, having a splendid blackish crimson zone and being very distinct; Prince of Wales, which maintains the high character which it gained as a seedling; and Mrs. Dunnett, with a fine, broad zone. Messrs. E. G. Henderson were second, and Messrs. F. & A. Smith third, with Jetty Lacy, very fine, Viceroy, and King. The last-mentioned firm was first in the next class, that for the best three Silver Variegated kinds, showing Banshee, Peri, and Miss Burdett Coutts; Mr. Turner being second with Excellent, Clara, and Miss F. Stevens;

and Messrs. Garaway third with Silver Pheasant, Julietta, and Cup of Beauty.

In the class for the best three Gold and Bronze varieties not in commerce, some very fine ones were shown. The first prize was taken by Messrs. F. & A. Smith with Goldfinder, having a broad, reddish chocolate zone; Plutus, darker in color; Sibyl, with a broad, deep-colored zone and narrow margin, the ground color greenish yellow. These varieties were very beautiful, bold, and effective. Messrs. Carter & Co. came second with Black Prince, with a broad, very rich chocolate zone, Cleopatra and Antony, very pretty, with a broad golden edge.

BULBS of all kinds, if they have been growing in the same place for two or more years, ought to be taken up as soon as the leaves begin to turn yellow and they show signs of ripening. If the bulbs were planted last season, they are as well to remain another season, although the flowers may not be quite as large and fine as when the bulbs are yearly replanted in fresh soil. If left in the ground, well-rotted manure should be supplied liberally, and lightly forked in late in the autumn. When the bulbs are taken up, lay them on shelves where they will dry in the shade until wanted. Make the ground for replanting deep, placing plenty of well-rotted manure well intermixed; then plant the bulb three inches deep, surrounding it entirely with half an inch thick of clean sand. The replanting should be made at different periods, as those first planted will be the first to bloom in spring, and by planting at different times, a succession of blooms may be had next season.

WINTER BOUQUETS.—The flowers of the purple fringe tree—*Rhus cotinus*—gathered before they become ripened, may be tied up and dried in an ordinary room, and kept all winter without dropping or losing their beautiful feathery form. They are admirable in the making up of winter bouquets, along with grasses, etc.

SUMMER GRAPE PRUNING.—*F. W. Woodward, Esq.*: Can you not tell us in the *HORTICULTURIST* what to do with our grapevines? Rules made for the East are utterly at fault in this soil and climate—which crowds them forward at such tremendous speed. We may prune and pinch as much as we choose, but we can not keep them in the bounds prescribed in the "books." Hadn't we better "let 'em run?" I mean, had we better set them fifteen or twenty feet apart, and with high trellises give them sufficient room not to crowd the foliage, and dispense with so much "pinching?" With such rankness of growth, I think it must gorge with sap and induce mildew and rot. We give grapes our poorest soil on hillsides, and no manure.

Respectfully,

C. H. CUSHING.

LEAVENWORTH, KANSAS, July 1, 1888.

[The remark made by William R. Prince, Esq., some years since, at one of the American Pomological Society's meetings, that "our native grapevine is emblematic of the American people, and must have room to expand," seems fully exhibited in the above and many other records we have received from those who are growing the named varieties in the rich virgin soils of the West. Our readers, if they have followed our remarks on grape-training during the past two years, or since the time of Mr. Mead leaving the editorial chair, will remember that we have continuously advocated longer winter and spring pruning than is generally laid down in the books, and in summer pruning we have advised less severe pinching than most writers; while if there is too much fruit set for the health of the vine, by reason of the long pruning, we have advised the disbudding or cutting away part of the bunches after they are well set. In our native varieties there is so great a difference in vigor, that no one rule of distance or length of training is found applicable to all. Each must have its appropriate distance in planting as

well as length in pruning, and this again will vary in soils and climates, so that we now, as heretofore, venture the remark, that whoever writes on the culture of the grape must make his writings identical with and applicable to each variety in course; and to do this he must have prepared himself by a careful observation of the variety whose culture he attempts to direct, in many different soils and climates, or otherwise his teaching will apply only to one locality—viz., that of his standpoint of observation—and not become of much value to the public generally. We know not who there is to assume this rôle, but we are satisfied that a little work on the Concord Grape alone, written in a good common-sense view, regardless of all foreign authors, and illustrated to life, not fancy, would meet a ready and extensive sale. The Catawba would bear another view; the Delaware another; and so on with Norton's Virginia, etc.; while there are many sorts so nearly allied to these, that with some slight changes, by means of intermediate notes in the text, the direction for one might be made to apply to another.—Ed.]

CUTTINGS of almost any plant may be struck now, because the common soil is almost as warm as a hot-bed, and a sash placed over it almost anywhere, and shaded, will soon produce a mild, gentle, moist atmosphere. The best cuttings for this time are formed from the ends of the young growing shoots; but any young wood, and even badly formed cuttings, may now be easily struck. It is a good plan for beginners to practice at this season, for if they fail with the first, there is time for renewal without loss or expense, as sometimes results from inexperience during early spring propagating. Sharp sandy loam is a good material for the bed, and it should be looked at as often as once a day, and, when needed, sprinkled with tepid water. Morning is the best time to do this.

EDITOR HORTICULTURIST: I am a novice in grape-growing, but from statements made of the profits accruing therefrom, I, two years since, planted about eleven acres, mostly with Catawba as the great American wine grape, some Concords, some Delawares, some Ives, and some Norton's Virginia. Since the planting, I have drank of wines of all these varieties, and had I known then as much as now, would have have planted more of Nortons; but having my vines now out and growing finely, the modes of pruning them have troubled me not a little. One of my friends cut all his vines, without regard to kinds, down to two canes of three buds each this past spring. But not seeing the policy of pruning all sorts alike, I practiced by the advice of a close observer, but not a practical man, and cut my weak and puny vines down to one or two buds; left my next strongest with one cane of three or four buds; and my very strongest canes, and especially the coarse, rank growing kinds, I left with two canes each, of six or seven buds each. My vines are now all looking well, and the weakly ones are rapidly becoming strong, making very vigorous new canes. But without telling more of my own, I am anxious for information. As I say, my planting is mostly of the Catawba, which although it had a character, at my time of planting, for rotting, at Cincinnati, yet North and West no such statement had come to my knowledge; and besides, I, after an examination of Cincinnati vineyardists' practice, regarded them as behind the age, a class who were following dogmas introduced by the old country laborers, through Longworth, few or none of whom had any knowledge except to follow out a mechanical practice in grape pruning, according as their employer abroad had dictated. I may seem a little harsh in this statement, but I write just as I thought, and with no assertion that my views are correct, therefore I trust no harm. The practice above named of my friend this past spring in cutting his vines according to

book, to me seemed also the carrying out of the Cincinnatian dogmas, and therefore my unwillingness to adopt it. Lately I have been looking at my vines and comparing them with my friend's. His have more or less of yellow leaves; mine are all quite green. Some of his Catawbas are showing signs of rot; nothing of the kind is yet evident on mine. He has pinched and trimmed from the first; I have done nothing but take away the false shoots or sprouts from close down at the crown. Of course the season is only part over, and now I want to know what to do. I am getting a great quantity of foliage. Shall I cut away? or shall I let it run? I see, at a late discussion on grapes at the Cincinnati Horticultural Society, that not only Catawba but Ives were reported rotting. Some disputed the fact of the Ives rotting, but conceded it a general thing with Catawba, all except instances of vines that were left unpruned and grown on trees and high trellises, a point that seemed to me sticking out against their barbarous pruning practice so boldly that even blind men could hardly fail of seeing it. But now what shall I do? My vines, Catawbas, are eight and ten feet on wire trellis. Shall I cut? or let 'em run?

J. T. LANE.

[*Remarks.*—Our correspondent is a little harsh on the practice of severe pruning of the grapevine as practiced by a large number of vignerons around Cincinnati, and yet all testimony of practice, and the ory of vegetable physiology, is concurrent in acknowledgment of a destructive or enfeebling agency produced on the vine by too severe pruning, either in winter or summer. For ourself, we do not think severe winter pruning as injurious as the destruction of foliage or allowance of natural action of the vine in summer; and if we owned our correspondent's vines, all we should do would be to pinch at this time the last half inch off from the end of every shoot. After many years' practice in training and study of the vine,

a large part of it in the vineyard, we find each year adding to our impressions of the expansive character of our native vines; and while we once planted a certain sort four by four feet, we now would plant the same sort eight by eight, and do not then feel certain that we have given it room. Every year's observation convinces us more and more of the necessity of giving such vines as Concord, Norton, Ives, Rogers' 4, 15, 19, etc., abundance of room in order to keep them in unimpaired health, and yet not reduce them by a too great expansion or surface, to the loss of perfection in swelling and ripening their fruit.—Ed.]

CLIMATE OF UTAH.—From the *Times*, published at St. George, Utah, we notice currants and gooseberries were ripe June 10; and at the same time pomegranates were in bloom; figs promising a good crop, and the fruit of pears and quinces then of quite good size.

LATE GROWTHS.—Do nothing to excite late growths in your orchard or ornamental trees. Avoid digging deep or plowing among or around them. If they are standing singly, then just loosen the surface soil with hoe or rake and lay on mulch. If in rows or cultivated orchard, run the cultivator among them just so as to keep the surface loose and clean of weeds, but in no case deep enough to break roots and induce renewal of growth. Late growth almost always results in enfeebled condition of the tree and renders it less capable of enduring extremes of winter.

NOTES ON PEAS.—I see by the London *Journal of Horticulture* that the variety known as Carter's First Crop proves identical with Sutton's Ringleader and Dillstone's Early. Not having grown the two latter by name, I must suppose the record correct, and only note that for earliness and productiveness this variety has for three years proved the first and best.

Waite's Caractacus is a variety that closely follows Carter's First Crop—is

stronger in vine, pods larger, but not as abundant.

Knight's Dwarf Green and Prize Taker come at the same time; the former is not quite as strong a grower nor the pod quite as large as the latter, but they are both among the best.

McLane's Princess Royal is a stocky rather dwarf grower—a good pea—but not with me profitable.

Napoleon is good, but the pea has no sweetness.

Eugenie comes with Champion of England, and is not as good.

Waite's King of the Marrows is a late one, a tall grower, productive, and a truly good late sort, with abundant and large pods. F. R. E.

CHRYSANTHEMUMS.—It often happens that, from want of care and attention, old plants of chrysanthemums become ragged and sprawling. These may be turned to good account by layering the shoots at this time, by which a number of small, well-shaped plants may be had, each of which will give a number of blooms and form pretty objects for the window or conservatory late in the season.

CAMELLIAS should be carefully looked over this month, and old plants that have filled their pots completely with roots will require abundance of water, while those in which the roots have not quite filled the pots, require only to be moderately watered.

THE GREEN-HOUSE, during this month, should be thoroughly cleaned out and, if needful, repainted. If not repainted, the wood-work should be thoroughly scrubbed, and the brick-work lime-washed, rat-holes stopped, and any other needful repair that is found necessary to make the house secure and healthy for the plants. After the work of cleaning is done, a week or more should elapse before any plants are again placed therein.

MONTGOMERY COUNTY (OHIO) HORTICULTURAL SOCIETY, N. OHMER, PRESIDENT. —From one of our Western correspondents we learn of the establishment of a Horticultural Society at Dayton, Ohio, under the name of the Montgomery County Horticultural Society, and having for its President N. Ohmer, a gentleman well known in that section for his enthusiastic interest in fruit culture. The Society holds meetings twice a month, and thus far has been successful in awakening interest and attention to the great subject of fruit-growing, now become so important a feature of our nation. One of the recent meetings was held upon the premises of the president, about two miles from the city center, where one hundred and four acres are stocked with fruits, such as pears, peaches, quinces, grapes, etc., etc. Mr. Ohmer's strawberry patch of six acres, mostly of Wilson, has produced an average of one hundred and twenty-five bushels to the acre, which sold at an average of \$5 40 per bushel.

WEEDS.—We must repeat our caution against letting weeds go to seed, because not only do some of our old readers forget its importance, but many new readers know not the great amount of labor and trouble they entail on the next year's work by reason of a little neglect at this time. Let no weeds go to seed on your grounds or those of your neighbor, if you can possibly prevent it.

EVERGREEN OR DECIDUOUS SHRUBS that have completed their growth for this year, may now be moved with safety from one part of the grounds to another, but it would not do to take them from a nursery and transport them any distance. After setting, water thoroughly and mulch at once. New roots will at once form, and the plants will start strong and vigorous next spring.

PELARGONIUMS should be repotted this month, if not before done. In doing the work, trim off the outside of the ball and roots with a knife, but do not shake it

clear of the soil or so as to break the ball. Use strong heavy soil with good drainage rather than light sandy loam.

ROSES propagated by means of layers this season should, as soon as it is certain they have become rooted, be taken up and potted off in good sharp, rich, sandy soil. It is no trick to form the layer, but many rose-growers know to their cost the loss attendant during winter of layered plants taken up and potted or heeled in at the close of the growing season. Pot them as soon as they have made an inch of root; set them in a shady place, water carefully for a few days, or until there is no appearance of their flagging, when the pots may be plunged in the soil, out in the full light, and by the close of the season each will present a well-grown and bushy plant. Of course they must be occasionally watered.

SPINACH for winter use, also lettuce and turnips, may be sown any time this month with good probability of successful cropping. Make the ground rich with well-rotted fine manure.

DIPLADENIA BOLIVIANA. —This plant was shown in flower for the first time in Great Britain at the Royal Horticultural Society's show on the 16th June by Messrs Veitch. The flowers are very distinct in color from those of the other dipladenias, being white, with a yellow throat, and measure about two inches in diameter.—*Cottage Gardener.*

HOW TO MAKE WINE.—Every man who wishes to know how to cultivate grapes well, and especially how to make wine, should get a copy of Husmann's work on the cultivation of the native grape and manufacture of American wine—a practical book by a practical man; fully illustrated. Sent by mail, post-paid, from this office, for \$1 50.

CARNATIONS and the varieties of pinks may all be layered this month, and make good plants before the close of the season.

HORTICULTURAL BOOKS.—One of our subscribers writes us inquiring as to books on different horticultural subjects, and remarks that he "considers it short-sightedness in agricultural and horticultural book publishers that they advertise their publications only in journals devoted to the subject, and even there only to a limited extent." He says: "Many persons buy books treating on the subject-matter to which their whole attention for the time is devoted—as, for instance, one man on grape planting, etc.; another arranging his ornamental tree planting; and they, seeing no advertisement, do not know of any book being published on the subject. But if in the leading news journal of his section a single line of advertisement appeared, he would often purchase, because of its then coming before him, the same man perhaps having read the advertisement a dozen times previously without thought of ever needing its information."

[It is highly probable our correspondent is correct, and we therefore give his remarks that they may be considered by booksellers and publishers. We ourselves think the booksellers in leading towns and cities would find it to their interest were they to give more attention to keeping on hand and advertising all of the horticultural books. We often send books by mail, to order of persons living in large cities, but who write they can not find copies of the work in any of the book-stores.]

ORNAMENTAL FOLIAGED PLANTS.—At the Royal Horticultural Show in June last, the Messrs. Veitch exhibited *Croton Wisemannii* as the best new ornamental foliaged plant. The leaves are beautifully mottled and marbled with green and yellow, and a rich yellow band along the center of the leaf.

The same firm likewise sent *Alocasia Chelsoni*, with magnificent bronzed leaves, especially when young, and being then remarkable for their splendid metallic luster. For the best new garden seedling in

flower, Messrs. Veitch took another first prize with a hybrid *Cattleya*, raised between *C. Chelsoni* and *C. Acklandiæ*, in which the colors are purple, white, and brownish green spotted with purple. Mr. Bull was second in the same class with Ivy-leaved *Pelargonium* *Princess Thyra*, with for its class large pale rose flowers, lined in the upper petals with crimson.—*Cottage Gardener*.

ZONAL PELARGONIUMS.—The exhibit for the best twelve Zonal Pelargoniums at the Royal Horticultural Show, on the 16th of June, resulted as follows:

The best twelve Zonal Pelargoniums—Variegated, Gold and Bronze, or Golden-leaved—came from Mr. Turner, and consisted of Excellent, Beauty of Guestwick, Clara, Beauty of Salthill, Sophia Dumarquesque, Mrs. Turner, Mdle. Christine Nilsson, Lady Cullum, very fine, Empress Eugenie, Queen Victoria, Dr. Simpson, and Princess of Wales. Messrs. F. & A. Smith were second with a very evenly-grown set of plants, the kinds being Sunray, Exquisite, Bullion, Banshee, Coronet, Miss Burdett Coutts, Louisa Smith, L'Empereur, Enchantress, Plutus, very fine, Sultan, and Imperatrice Eugenie. Messrs. Carter & Co., who were third, sent Princess of Wales with a beautifully colored zone, Goliath, Fairy Land, Aurora, Sultan Abdul Aziz, Royal Standard, Ruby Ring, Marian, with a bright crimson zone, Josephine, Egyptian Queen, very effective and good, Prince of Wales, and Daybreak.—*Cottage Gardener*.

NEW JERSEY STATE AGRICULTURAL SOCIETY FAIR.—This Society will hold the regular fall fair on their own grounds, at Waverly, N. J., midway between Elizabeth and Newark. Every effort will be made by the officers to make this the largest and best exhibition ever held by this Society. Premium lists can be obtained by application to R. S. Swords, Esq., Newark, or Benjamin Haines, Esq., Elizabeth, N. J.

CURRENT CORDIAL.—We are indebted to N. Ohmer, Esq., of Dayton, O., for a sample of what is generally termed current *wine*; but as we think the use of the word wine should apply only to the juice of the grape, as cider does to that of the apple, perry to that of the pear, we drop the term in this connection. This cordial was made from juice of the white currant, using for fourteen gallons of juice ninety-five pounds of sugar, and water to make forty gallons. The liquid is clear, with very little color, mostly, we should think, derived from the sugar; is rich and sprightly, and for its class superior.

TREE SUCKERS.—This is the best month in the year to remove suckers from around the crowns of trees. Removed now they will not sprout again; whereas, if removed in the fall, winter, or spring, they will grow again as strong as ever. Dig away the earth two or three inches deep from around them and cut clean down to their connection with the main trunk or roots. Leave the wound open to the air for a day or two, then re-cover with earth.

PINCHING OR CUTTING BACK RASPBERRIES.—It has been our practice, for some years, to pinch or cut back say one or two inches of the growth of this year's raspberry canes, intended for next year's fruiting, as soon as they have reached three to three and a half or four feet high. By so doing we find the cane to become more stocky, more branched, and better able to support itself the next season during fruiting. The stopping-in of black currants in this way we have also found practically of value.

GOOSEBERRY AND CURRANT BUSHES should have the earth plowed among them, and all thoroughly hoed or cultivated as soon as the fruit has been gathered. This course will enable the roots to act more vigorously and supply the growth of young wood and the germs of another

year's fruit, which are almost entirely formed in the latter part of the season, or after they have ripened this year's crop.

ROSES that have been layered this season will be much benefited by having a mulch of some sort spread over the ground where the new roots are forming. It serves to keep the temperature of the roots more uniform and continuous in growth, as well as to supply or hold moisture, which, with the heat, is necessary to growth.

F. W. WOODWARD, Esq.—*Dear Sir:* Will you, or some of the readers of the *HORTICULTURIST*, inform me, through the columns of the magazine, of the best method of making wine from our wild *Fox* grape, or summer grape? and oblige,

Very truly, yours, W. J. BROKAW.
ROLLA, PHELPS CO., Mo., July 20, 1868.

[We are not familiar with the mode adopted for the manufacture of wine from this grape. Will some of our subscribers supply us with the information? In the mean time we advise our correspondent to consult Husmann's "Grapes and Wine," which is the best work on the subject ever published.]

STRAWBERRY PLANTING.—We consider spring the best season for setting strawberry plants on a large scale, but the work may be done at almost any season when the ground is open, free from frost, and you have the plants in condition. The common practice of obtaining plants grown in the open air from the runners of this year, and setting them out with a simple watering, and no after-protection, more often results in death of the plant than a vigorous growth. On a large scale we consider it unwise to plant at any season of the year except the spring; but amateurs, gardeners who wish to renew their beds, and those who desire to obtain and plant new sorts for testing, can do so now, or any time before frost sets in, with all chances of success. Having first

prepared the ground, if you are to use the ordinary ground plants from runners of the current year, procure and plant as soon as you can; and as you set each plant drench it thoroughly with water (if set in a dry time), so that the whole ground will be saturated; then immediately cover the whole ground with some kind of mulch, either straw, new-mown grass, coarse manure, etc., at least four inches thick, covering all but the crown of the plant. Such practice will, ninety-nine times in a hundred, result in success. But a better course for those who desire to renew beds at this season, or any time this fall, or for those who are about to test new sorts, is to procure pot plants that have this season been grown in the pot from the first formed runners. This practice is now quite general, we believe, with most nurserymen, and especially with those who have choice or new sorts to send out; so that an order can be forwarded and filled, the plants received, and set out without regard to weather. To those who do not know it, we will say that the young plant is taken from the parent even before it has formed, outwardly, a sign of a root; it is potted like a cutting in a small pot of good but light soil, largely of sand, and placed in a frame, and shaded, watered, etc., as with an ordinary cutting. It soon takes root and grows freely, so that even if not transplanted until quite late in the season, it is safe to grow and fruit some the next year, provided it is well mulched for winter protection.

WON'T YOU GIVE US YOUR NAME AND ADDRESS?—In the June number of the *HORTICULTURIST* a few very cogent remarks are offered on the advantage of writers appending their proper names and places of residence when they communicate their experience to the public. The party desiring this reform in the conduct of your magazine is known as a respectable nurseryman and fruit-grower, and if the writer does not err, he published his own experience on the management of pear-

trees some years ago in circular form. In doing so he placed us under a great obligation to him. Having had something to do with writing for horticultural journals for the past fifteen years, and being somewhat conversant with the pleasures and difficulties attending voluntary contributors, I would add my testimony to your own on the impracticability of the course desired by your friend. The first thing that the publication of the name and address of your correspondents would entail upon the unwary individuals would be a crowd of trade circulars, specimen copies of back numbers of all struggling rural journals, from the large and imposing journal of horticulture to the latest country farm paper. Our country is wonderfully smart in such matters, always on the lookout for the main chance. Oh, no! we must still lie under the cover of the Editor's honor, hoping at some future day to creep out of the tub, like Diogenes of old.

"YOUNG DIOGENES."

QUINCES.—*Mr. Editor*: Where can apple or orange quince trees be had? and of what age, quantity, size, and price? Please inform a subscriber through your valuable journal.

KENT CO., DELAWARE, June 30, 1868.

[Will some of our nurserymen who have quinces to sell please advertise them, or notify us that we may inform our correspondent.—ED.]

HOLLYHOCKS may now be propagated as soon as cuttings can be got from the stool. Cuttings from the flowering stems do not make good plants.

THE WALTER GRAPE.—For the last six years horticulturists have heard more or less about the Walter Grape, a variety which is claimed by its owners, Messrs. Ferris & Caywood, of Poughkeepsie, N. Y., to be earlier, hardier, and better than any other variety now in cultivation. It is advertised in our columns to be sent out for the first time next fall, beginning in October.

NATIVE WINES.—We notice that M. Werk & Sons, of Cincinnati, are receiving complimentary notices in the Cincinnati papers, as well as those of Paris, France, for the superiority of their wines made from Catawba, Delaware, Ives, and other grapes.

PACKING EGGS FOR TRANSPORTATION.—

A writer in the London *Cottage Gardener* gives the following as the best mode of packing eggs for transportation when desired for hatching :

"During the last three years I have had about 600 dozen of eggs forwarded to places far and near, each egg rolled in paper and packed on end in sawdust—a layer of soft hay lining the top, bottom, and sides of the basket, which is tightly fastened with pliable wire. Their exemption from breakage when packed in this way is marvelous, and I can not learn that their fecundity is in the least impaired by it. Moss and cotton are difficult to manage, and expensive; rolls of hay are clumsy; and, as your correspondent avers, sawdust is cheap, cleanly, and comatable."

GRASS LAWNS.—It seems almost like a waste of words to repeat our caution relative to the close mowing of lawns during this month; but we have, as we sit down to write, just come from advising relative to recuperating a lawn that had become very sadly disfigured and injured, full of bare spots, foul weeds, etc., caused, as we think, by reason of a too severe close cropping during last August's hot sun and severe drought. To have a good lawn, it should be freely mown, and no matter how closely, early in the season; but as soon as the hot season comes on, the mowing should be less frequent and less close; while, during August, care should be had to rolling it often and early in the morning, while the dew is on, and the mowing high, or just so that no seed be formed. As soon as the fall rains commence, then the lawn may be closely mown

again; but near the close of the season it should be left to form a growth for a winter coat of protection to the crowns of the roots. These remarks will be found in practice just as applicable where command of water for sprinkling is had as where it is not. The result, however, will not as soon develop.

POULTRY.

F. W. WOODWARD, Esq.—*Dear Sir:* In resuming my pen for the purpose of giving you the promised monthly dissertation upon the subject of Poultry, I have concluded to submit to you a paper upon that variety of chickens, which, as layers, as birds for the table, for quietude of habits and general thrift and hardiness, ranks at the head of the list of domestic fowls—I mean the Brahmas. There are two varieties of the Brahma family, known among breeders and fanciers as Dark and Light. In size and general conformation these varieties are strikingly alike, while in color they are quite distinctive. I shall confine myself herein to a description of the light variety; and as it is probable that many of your readers may not be familiar with the peculiar characteristics of this most excellent bird, I will attempt to give you a rather critical portraiture of what I esteem a model Brahma.

The cock should have a broad and rather long body, with full breast, and covered with a sort of pearl-white plumage; legs large and strong, and in length symmetrically proportioned to the size of the body, standing well apart, and feathered down the outsides to the ends of the outer toes; wings small, with the flight feathers dark or black, and the points well covered by the saddle feathers; the tail black and short, and not very upright (as Tegetmeier says it should be), with abundant bronze-colored coverts; small pea comb (a pea comb has the appearance of three small combs united, the center portion being highest) with rather long neck, well curved and abundantly supplied with long neck-

hackles which should be delicately penciled above the shoulders. The hen should have the same general characteristics of plumage, etc., as the cock, except that most fanciers prefer to have them darker in the neck-hackle than the male, with a more liberal endowment of fluff feathers around the thighs, with very short dark tails carried almost horizontally. Year-old cocks, in fair condition and health, should weigh from 9 to 11 lbs., and pullets from 7 to 8 lbs.

I have been thus critical in giving the predominant characteristics, and stating the sizes, so as to enable persons, who may not be very familiar with the points of this valuable fowl, to avoid the impositions which, I am sorry to say, are too frequently practiced upon the uninformed and confiding purchaser by ignorant or unscrupulous dealers. The weights I have stated are by no means the highest which the Brahma attains, for you will doubtless remember the eighteen-months-old cock (the finest, I am sure, that you or I ever saw) which I had the pleasure of submitting to your criticism last fall, weighing over 14 lbs., as well as the six-months-old pullet, which weighed over 8½ lbs.

While upon the subject of the weights of fowls, permit me briefly to refer to a communication from the pen of Mr. Thompson, of Staten Island, which I met with in the Albany *Cultivator* of the 10th inst. In his communication, in speaking of a lot of his young Brahmas, Mr. T. says: "This season, owing to the cold, the growth of my chicks for the first two months was not so rapid as last year; and yet, strange to say, at the end of three months some of them had gained over a pound a month—the largest pair weighing, together, 6 lbs. 10 oz." Now, Mr. Editor, permit me to say that last spring I had a brood of thirteen Brahmas hatched in my back yard (25 by 35 feet) in this city, where they were kept till they were eaten or otherwise disposed of. They were well fed and remarkably thrifty, notwithstanding the limited space to which

they were confined. When two months old, two of the largest (a cock and pullet) weighed three pounds each; at three months I weighed them again, when the same pair weighed five pounds each, being a gain of two pounds each in a month. With a larger run, and free access to grass (which they could not get upon the yard where they were confined), I think they would have thriven still more rapidly than they did. When these younglings were served upon the table, it would have made the mouth of an epicure water to taste them, for they were as tender as marrow, and as sweet as fresh May butter.

The partiality of the writer for Brahmas is predicated upon more than a dozen years' familiarity with the excellence of their qualities, and there is no knowledge or authority so satisfying or trustworthy as that of experience. That they are the most quiet fowls in their habits of any of the varieties which the writer has ever attempted to manage, admits of no controversy. A fence four feet high is quite sufficient to confine them within prescribed limits; and they do not seem to fret or worry over confinement.

Touching the laying qualities of the Brahmas, I beg to be permitted to say that during a part of the past winter and early spring, I had the oversight of a flock of twenty game hens and three Brahma hens. From the middle of December (the season of the year when eggs are scarcest and dearest) till about the middle of March, the three Brahma hens laid more eggs than the entire twenty games did, and they were fed daily together and had the same walk. One of the Brahma pullets had laid two litters of eggs and was sitting the second time before the games commenced to lay at all. The same was the experience at another farm where the fowls were part Brahmas and part of the common dunghill breed—the Brahmas had laid and hatched their first broods before the others commenced to lay. In the month of December last I gave to a gentleman a trio (a cock

and two pullets) of chicks which were hatched in the preceding September. In an interview with this gentleman, about the 1st of July, he informed me that the pullets which I gave him commenced laying early in the spring; that one of them had hatched and reared a clutch of ten chicks, and was then sitting again, while the other was still laying regularly along, intermitting an egg once in ten or twelve days, and without ever having sat at all. Up to the period when this information was communicated, the gentleman informed me that his two pullets together had supplied him with over 140 eggs. One of the prime qualities of the Brahma is, that the pullets mature very early with proper care, and will generally commence to lay by the time they are six months old. Indeed, I heard of an instance this spring, of a pullet commencing to lay at 4½ months old, and before she was six months old she had brought out a brood of chicks. Pullets hatched in April or May will lay through the winter if properly fed and protected. But eggs in winter may be looked for in vain, from any variety of fowls, where they have to scratch for subsistence, and endure the bitter neglect and exposure to which they are too frequently subjected.

As birds for the table, the writer, who is now beyond the prime of his years, and who has had the pleasure of eating poultry in many lands, unhesitatingly declares that he is yet a stranger to that species of domestic fowl which is more savory or superior to a well-fatted and well-cooked Brahma. He is aware that there is a crude and ignorant sort of assumption on the part of some persons that all the larger varieties of fowls are coarser and tougher in their flesh than the smaller kinds. But this is a most egregious error. It is not so much the physical organization as the physical condition which gives flavor and tenderness to birds and animals alike.

It will hardly be controverted, that both animals and birds when in low condition are less savory and less nutritious than if

the same were fat. And it is not unfrequently the case that condemnation is pronounced against breeds, when a more discriminating and intelligent judgment would fulminate it against the man who feeds, or rather who has neglected to properly feed the objects committed to his care. There is a so-called economy which is so exact and austere as to go a great way toward balking, if it does not entirely circumvent, any well-intended efforts in the path of improvement. Not only seasonable but generous feeding is indispensable to the highest physical development of every species of animated nature; and if early care is withheld till the framework of the animal economy is stunted or dwarfed, no after-care can atone for the neglect or superinduce the fullest physical development.

That the Brahma is the most generally popular of all the domestic fowls in this country, has found verification at every fair or poultry show which the writer has attended for years past; for there have been not only more coops of them on exhibition than any other variety, but they have always attracted more attention, and called forth more favorable comment than any others. And that they stand high in England is evidenced by the prices which are paid there, as well as by a remark in the *London Country Gentleman* of June 25th, 1868, whose editor, speaking of the prizes to be awarded at their recurring exhibition, says: "The managers of shows may rest well assured of the simple fact, that no class are more popular than Brahmas." E.

NEW YORK, *July 15, 1868.*

MOULTING SEASON OF FOWLS.—During the moulting season of fowls it is advisable to separate the cocks from the hens. This practice is not absolutely necessary, but experience with the writer has shown him that it gives greater strength to his old birds, and brings more eggs in winter and early spring. Young cocks especially should never be permitted among hens during their moulting season.

THE HORTICULTURIST.

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NOVELTIES IN FIELD AND GARDEN.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

SOME ingenious writer will one day favor the world with a volume whose title should be "The Curiosities of Horticulture." Neither literature, the sciences, the mechanic arts, nor any of the multitudinous occupations to which the human mind has been directed, contain more striking instances of curious discoveries than have been made in agriculture and its kindred pursuits. It is true that none of these have so extensively revolutionized the industrial world as did the cotton gin or the powerloom. The masses who cultivate the fields or decorate the garden form but a portion of the great aggregate of humanity. Yet each subdivision of terraculture has a world of its own, in which discoveries have from time to time been made, as sensational within its limited atmosphere as was that of either steamboat or telegraph to the whole. Of these, the reaping machine was a triumph whose far-reaching value it would be difficult to estimate. Vast fortunes have fallen to the lot of the originators of many of these discoveries. Hence the yet unexhausted field of agricultural and horticultural invention continues to be explored by other minds

in search of new devices for the better accomplishment of old processes, knowing that the world is waiting for them, and that they will be sure of being rewarded.

So has it ever been in horticulture, and so will it continue to be. The history of this world-wide art abounds in curiosities, personal, pecuniary, mechanical, and scientific. Its chapters of vicissitudes and failures would be long and painful ones; but, like the huge jumble of obsolete models on the dusty shelves of the Patent Office, they would be full of instruction, as well as of warning, to those who are to succeed us. Of its successes there would be brilliant and encouraging records; for it is remarkable what fortunate results have been realized from small beginnings. A century ago only four pinks were known to English florists, all which were very different flowers. James Major, a ducal gardener, bethought him that he would sow a few seeds, from which he succeeded in raising a few plants. When coming into bloom the following season, one of them proved to be the first double pink that had ever been seen. Great as was the superiority of this flower, its originator regarded

it only as the forerunner of still more brilliant varieties which time and attention would enable him to produce. All these anticipations have been realized in the extent and beauty of this attractive family of flowers. The advent of this first double pink created a sensation in the floral world of England a century ago. Major was offered ten guineas for the plant, but declined selling, and proceeded the next season to multiply the stock. The result of one year's care was a profit of £80,—a great sum in the pocket of a gardener a hundred years ago.

The stimulating hope of reward is infinitely more potent now. Public taste has been educated to the highest point of appreciation, and wealth has become so extensively diffused, that floriculture receives its full share of an unprecedentedly lavish expenditure. Novelties are appreciated and sought for, hence all classes are ambitious to originate them on their own grounds, or to discover them in the remote and waste places of the earth. The great European florists have their botanists swarming over distant countries in perpetual search after new flowers. They have thus made the whole world tributary to a constantly increasing public demand. Enormous expenses are encountered in maintaining these expeditions, but the universal call for fresh varieties renders the result a profitable one. It was these floral missionaries who caused Mexico to yield up the cactus and the dahlia. Their labors under tropical suns have made England gorgeous with flowers, for nearly all she has are exotics. Southern Europe gave her the rose; America, the honeysuckle and passion flower; Hungary, the laburnum; Italy, the daffodil; while lavender, rosemary, and mignonette were also from the south of Europe. The catalogue of English fruits will also show how largely she has been benefited by foreign lands. Italy gave her the mulberry; Syria, the plum and apple; Flanders, the cherry, gooseberry, and strawberry; Greece, the

apricot and currant; Portugal, the grape; Persia, the peach and nectarine; and America, the raspberry and walnut.

But other countries have shared in this system of international exchange of fruit and flower. Our own fields and gardens are crowded with precious contributions from foreign lands, yet the unsatisfied appetite for novelties of all kinds increases, because the circle interested in them is annually widening. As the wealth of our country accumulates, so is our ability to indulge in horticultural pursuits enlarged. A crowd of able publications devoted to the science act as educators and stimulants. Architecture contributes its ornamental designs for rural embellishment and comfort, and great wastes of stunted oak and brushwood are transformed by practiced hands into charming landscapes, wherein Flora and Pomona may find ever-fragrant and ever-fruitful homes.

There is an expectant multitude for every novelty the earth can be made to produce, whether it be useful or ornamental. If the originator of a pink receives an abundant reward, we may be assured that there is profit for the fortunate genius who first astonishes the world with a new and better squash. Plebeian though the latter may be, it might still prove as rich a speculation as a new rose, seeing that there are hungry multitudes as prone to squashes as to roses. They have stomachs which, with painful regularity, require to be filled; and these unwashed masses keep fat and hearty without developing even the most latent taste for flowers. The discoverers of the useful thus also have their reward. But few of us have the remotest idea of the skill, the patient waiting through years of trials and of proving, which the painstaking originators of even new vegetables are required to exercise and endure, after all to find themselves disappointed. We hear of the successes, but of the multitude of failures no sign is made.

It is universally admitted that the laborer is worthy of his hire,—the inventor,

of his reward. I have been thinking over the proposal of my friend Fuller, that the originator of a new plant should be protected in his discovery by patent. The propriety of such protection strikes me as being eminently just. A man will devote years of patient watchfulness and skill in the production of a new and valuable variety of fruit or flower, and his reward is limited by the sale of such stock as he may choose to accumulate before offering his discovery to the public. When once in possession of the latter, it is multiplied in winter and summer, every conceivable forcing process being instantly invoked to manufacture a world-wide supply. The originator receives but an indifferent reward; and though he may seek for a fair one by demanding high prices, yet this strictly honorable effort is unsparingly denounced as an extortion. Instances have been known of a new fruit having been stolen from the grounds of the originator, and secretly multiplied until he brought it into market, when the dishonest competition robbed him of a large share of what he had laboriously earned.

The Government protects the inventor of a clothes-pin or a goose yoke by a patent running seventeen years. These implements are merely new developments of old processes. The materials composing them are well known, and are common property, the production of nature, whether of wood or metal. It is from these that the inventor fashions and combines his new device, which, because of its being new and useful, is secured to him by patent. He may fill warehouses with his improved goose yokes, refuse to sell them to an impatient public, and no one dare manufacture them, except at his peril. When he does sell, no one but himself can produce them, unless by license. His monopoly of the market for goose yokes is absolute, and can not be broken up except by some more ingenious mind inventing a different and better one. The most trifling mechanical contrivances have thus

become stepping-stones to fortune. How little ingenuity it required to invent the goose yoke or the clothes-pin! yet the Government protected that little, and the protection secured rich rewards. Not so with the originators of new and better fruits and flowers. They labor in this vocation year after year, concentrating upon their efforts the experience and skill of a lifetime, and not succeeding oftener than once in five hundred trials. Even when signally successful, their reward is too often far below their merits. Take the Albany Seedling Strawberry as an illustration. Here is a fruit of untold value to the nation, the unquestioned offspring of a single individual. That berry must have enriched hundreds of fruit-growers, and is destined to enrich thousands. But who can say that its originator received the reward to which he was entitled, or give the world a history of the time, and labor, and patient waiting which he went through before he succeeded in his great discovery?

There may be difficulties in the way of carrying Mr. Fuller's programme into practice, but they may be overcome. As the law now stands, no one can manufacture a patented article without a license from the patentee. Let the inventor of a new plant receive his patent for it. When he sells the plants, let him also require payment for the right to manufacture and sell other plants in a specified territory. If it be valuable, the purchaser of the right to that territory may dispose of rights to others, and thus refund himself for what he paid the patentee. Should the plant be offered for sale beyond the limits of the territory sold, the patentee will become aware of it, and can prosecute for infringement, precisely as in the case of a machine or process. There ought to be no difficulty in having Mr. Fuller's excellent suggestion adopted. At first sight it will strike many as an absurd and impracticable novelty. But let its fairness and justice be once admitted, and then make it law. It is protection alone that has given

to American ingenuity its present mighty progress in the arts. Extend that protection to the arts of horticulture and floriculture, and an inconceivable impulse will be given to the highest development of both.

SOMETHING OF VINES AND CLIMBERS, AND SOMEWHAT OF THEIR APPROPRIATE USES.

By the cottage porch, as well as the finished portico; by and in the rustic vase, as well as the marble fountain; everywhere that man seeks to decorate and adorn, do we find some variety of climbing vine. The showy and brilliant *Tecoma*, with its hundreds of scarlet trumpet-shaped flowers, attracts and commands admiration, to entire forgetfulness of the rude building which supports it; the light and airy *Woodbine*,

"That loves to hang on barren boughs
Her wraths of remote flowery perfume,"

by its light, yet airy, negligent character, gives to the rustic porch an appearance of refinement, an impression that beneath its shelter there dwells a mind alive to the emblems and manifestations of God's love to man. Everywhere, in the wild wood, on the mountain, and by the river-side, in the green-house, and the flower parterre; decorative of the brow of science, and clinging around the tomb of departed friends; everywhere are found vines, and everywhere do they so harmonize with either nature or art, that no harsh lines or thoughts intrude when viewing them.

In the formation of artificial rock-work, or over the edge of some bare yet needful excavation, a few vines relieve the want of taste or knowledge in the builder, or render what would be bare and harsh to the eye pleasing, if not romantically attractive. A few rocks, natural to the geological surface of the country, and thrown together void even of any taste and art, but covered with the *Ampelopsis*, or *Virginian Creeper*, will often give a better,

more harmonious, and pleasing effect than any construction, no matter how artistic, of curious stones, slag of glass-houses, and scoria from blast-furnaces. The last two

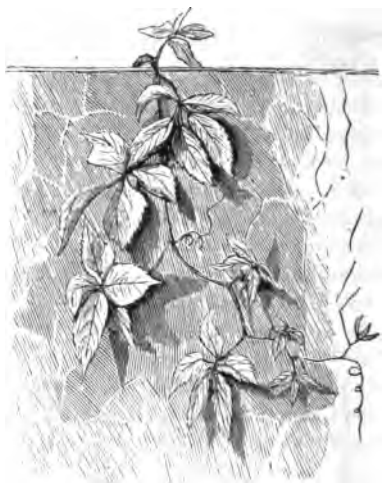


FIG. 82.—*Ampelopsis*.

are ugly in themselves, unpropitious to the growth of plants, and only belong where an in-door mineralogical rock-work museum is desired.

Among all the various vines and creepers, none possess such great luxuriance and beauty in foliage, more perfect hardiness or rapidity in growth, or so great a variety of colors and richness in autumn foliage, when it changes from a rich green to a mingling of scarlet, orange, crimson, and purple, as the *Ampelopsis*, or *American Woodbine*.

Next among our native vines we have

the climbing Bittersweet (*Celastrus*), fig. 83. It is more woody in its character, and admirably adapted to the covering of rustic arbors, as its stems as they grow and increase in size from year to year serve to sustain and prop up any decaying post or arch. Trained as a pillar on the point of a roadway or in the shrubbery, where its deep green and handsome foliage, followed by the orange scarlet of its large clusters of seeds in autumn and early winter, makes it ever an object of beauty and attractiveness.

The *Tecoma*, or Trumpet Flower or Creeper, although of late years comparatively little used, because perhaps of its becoming so common, has claims for certain positions unequaled by any other vine.

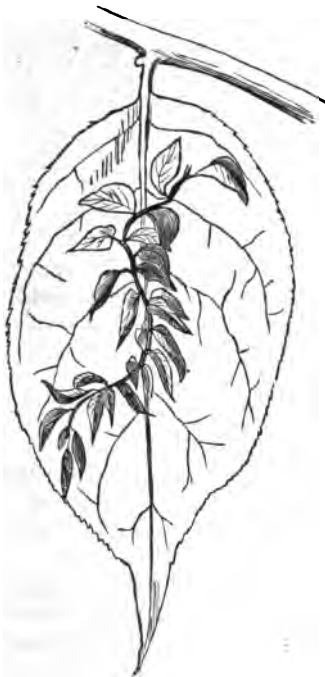


FIG. 83.—*American Bittersweet*.

Like the Bittersweet, its stems assist in the support of decaying wood-work upon which it may cling (fig. 84), while the great beauty and abundance of its trum-

pet-shaped orange-scarlet flowers in July and August, with its pinnate-shaped, glossy light green foliage, make it always a fea-



FIG. 84.—*Trumpet Flower*.

ture to which the eye turns in admiration of its splendor. For covering unsightly fences, to shut from view some rude out-building, or trained upon the body of some old tree, there is no climber so easily procured or grown, and few that possess more desirable qualities. It is occasionally a little tender while young, and in some northern locations it is well to cover, or in some way protect it for the first two winters.

Contrasting strongly in habit, period, and color of flowers with the last-named is the *Wistaria* (fig. 85), of which there are several varieties, the best among them being the *Chinensis*, or Chinese *Wistaria*. This also has a woody stem, and when once established grows freely in almost any soil. It is a very rapid grower, shoots frequently, making a growth of twenty to thirty feet in a season, so that in half a dozen years one

plant will cover the whole side of a house, and with its hundreds of racemes of bluish-purple, sweet-scented flowers in May and June, can be considered one of our most magnificent climbers. There is a variety with white flowers, and when two or more are to be planted, it should be used. For training upon an architectural portico, or an iron balcony or rail, it is admirably adapted.

The Honeysuckle (*Lonicera*) is a class of

intermingled with the Wistaria, it adds much to the latter when in bloom. The



FIG. 85.—*Wistaria*.

climbing vines of easy culture; all are beautiful in foliage and flower, and some varieties have very fragrant flowers, like the belgica and japonica. This latter (fig. 86) has a slender stem or vine, with various colored flowers, very fragrant, and when not exposed too openly to the sun, retains its foliage all winter. It blooms freely from May to September, and is one most desirable of all the varieties. Grown and twined



FIG. 86.—*Crimson Honeysuckle*.

orange-colored (fig. 87) is a variety with which we do not often meet; but from its broad, dark, coarse foliage and orange-red



FIG. 87.—*Orange-colored Honeysuckle*.

flowers is highly ornamental for covering among this family, of which all are beautiful and appropriate for rock-work, arbors, coral, is also another of the good ones or masses in the shrubbery.

TWO FINE APPLES.

BY CHARLES DOWNING, NEWBURG, N. Y.

DEMOCRAT—(VARICK).

ORIGIN uncertain; some claim it to be Trumansburg, and others say it was brought from Dutchess Co., N. Y., some forty years since, and was there called Varick Apple. It is considerably grown in Tompkins and Seneca Cos., N. Y., and is a fine winter

apple, and worthy of a place in every orchard, especially for family use. George S. Conover, of West Fayette, Seneca Co., N. Y., to whom I am indebted for specimens, etc., writes me:

"From all I can learn, it is supposed to have originated in the vicinity of Tru-

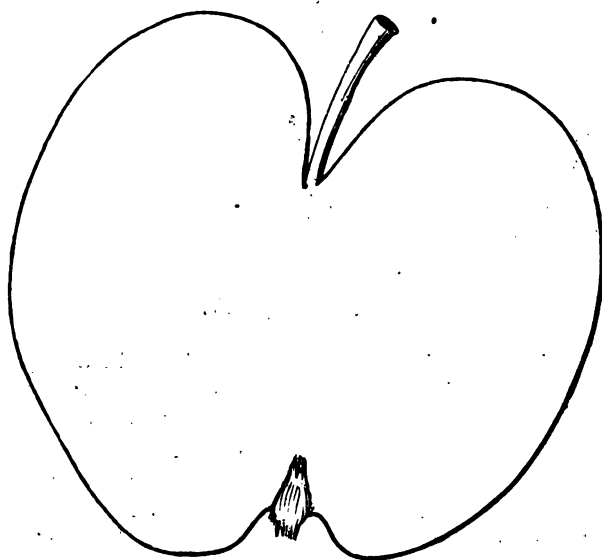


FIG. 88.—*Democrat*.

mansburg, Tompkins Co., N. Y., and known there as the Democrat. Tree, vigorous, upright, a good bearer, and generally produces a bountiful crop every other year, and often a moderate crop alternate years; fruit, always fair, remarkably so for so great a bearer. It is also a good keeper."

Fruit, medium; size, roundish conical, obscurely ribbed; skin, pale whitish yellow, shaded, partially striped and splashed with light and dark crimson nearly over the whole surface, and pretty thickly sprinkled with small light dots; stalk, rather short, slender, set in a large, deep, regular cavity; calyx, small, closed, seg-

ments small and short, coming to a point; basin, medium, rather deep, corrugated; flesh, white, fine, sometimes a little stained next the skin, very tender, juicy, mild, pleasant, subacid; flavor, very good or best; core, rather large; ripe from December to March.

STYMER'S APPLE,

a new promising late fall or early winter apple, originated on the farm of

Jacob Stymers, in the village of Dobbs' Ferry, on the Hudson. Specimens were sent me by Dr. James Fountain, who informs me that the young tree came up under an old Spitzenburg apple-tree—the whole orchard being Spitzenburg. Tree, a vigorous grower, rather more upright than Spitzenburg, but resembling it somewhat; rather tardy coming into bearing; young wood, dull reddish brown, slightly downy.

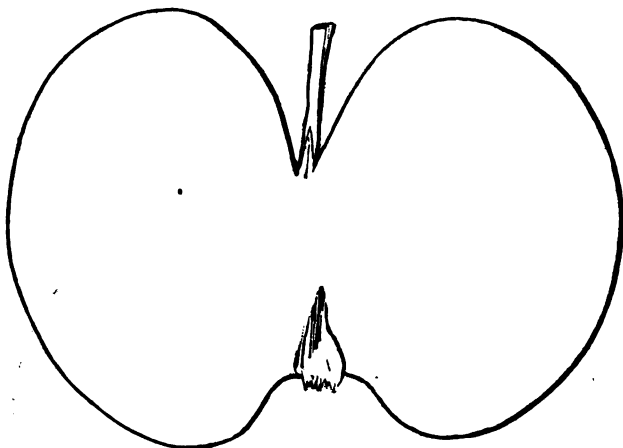


FIG. 89.—*Stymers's.*

Fruit, medium size, oblate, inclining to conic; surface, smooth, and nearly regular; skin, yellowish, shaded, striped and splashed with light and dark red (nearly over the whole surface), with some of the splashes dark crimson, moderately sprinkled with light and gray dots; stalk, short

and small, set in a large, deep cavity; calyx, closed or partially open, segments short, erect; basin, large, deep, uneven; flesh, fine, whitish, tender, juicy, mild, pleasant, rich, subacid, slightly aromatic, very good, or best quality; core, small; ripe, October to January.

BUDDING MARSHAL NIEL ROSE ON GLOIRE DE DIJON.—Those of your readers who possess a strong plant of Gloire de Dijon, will be well repaid if they devote a part of it to Marshal Niel. Two years since I budded a shoot about half-standard high; last year by closely pinching all the shoots I formed a bushy head, which this

year is a glorious cluster of blooms. The stock appears to have sufficient influence to color the outer petals of a rosy buff, closely resembling the Gloire de Dijon; the inner petals are the deepest yellow, and the flowers are wonderfully solid and well-formed.—T. F. R., in *Cottage Gardener*.

NOTES ON FRUITS IN THEIR SEASON.—RASPBERRIES AND
BLACKBERRIES.

BY F. R. ELLIOTT.

ACCORDING to my observation and information, the canes of raspberries in northern Ohio and a large portion of the West matured well last year, wintered with comparatively little injury, and in their due time blossomed and set full of fruit. The first berries matured well; but owing to the great heat of the season, the second did not fill as perfectly; the third less perfect; and the last to form were mostly a failure. This has varied, of course, in varieties,—the False Red Antwerp—or as more commonly called Allen—and the *thornless* Black Cap maturing the first berries and perfecting perhaps a larger proportion of the crop than other sorts. The Kirtland, Franconia, Red Antwerp, Hornet, and Naomi followed in ripening about in order as I have named, while the American or Doolittle followed the Thornless, and was again followed by Philadelphia and Miami, and these by Mrs. Wood; and these, again, as I write—August 15—are followed by Belle de Fontenay producing its second crop. So much for their comparative order; and now for their values comparatively for family use and for commercial marketing. The price governing sorts has ranged at an average of six dollars a bushel for Black Caps; and for the Antwerp class, such as Allen and Kirtland, an additional dollar per bushel was readily obtained; while Naomi brought yet an additional dollar, and was readily taken by dealers.

In this section, the Kirtland, Allen, and Naomi are just as hardy as the Black Caps; and so far as a local market will take the fruit, the first two are in their season more profitable; while Naomi, by reason of its firmness of fruit for shipping, large size, and superior quality, can not fail of value

where even a distant market is to be supplied. The productiveness of the Allen and Kirtland is about the same, while the Allen is a little the most firm, and the Kirtland the largest and much the best in quality. I will here notice a little slur cast on my knowledge of the Kirtland by a late *ad interim* report of the Secretary of the Ohio Horticultural Society, where he states as follows:

“An old bed of the Kirtland Raspberry was examined quite critically by Colonel Richmond and Mr. Lum, of Sandusky, as these gentlemen were inclined to the opinion that the true Kirtland, as originally named by Mr. Lum, was not the same described and figured by Elliott, or known by him and Dr. K. as the Kirtland, and this opinion they claimed was confirmed by the inspection of this old bed, which they asserted was composed mainly of the spurious sort, but had a few of the genuine in it, the latter being a larger and better fruit, and more conical in shape than the other.”

I have only to remark that I have a high respect for Messrs. Lum and Richmond, but believe my knowledge of the original Kirtland, from many years' examination and gathering the fruit from canes in the original bed (which bed, I may here say, was, and would have been, unknown, except by reason of my daily examination and comparison in tracing up the sort sent out by Mr. Lum), is perhaps quite as correct as an examination made by Messrs. Lum and Richmond of half an hour, and with little or no fruit on the canes.

To return: the Allen, Kirtland, and Naomi have been here grown on sand as well as clay soil, and successful in each. For market, the Allen and Naomi are most desir-

able; but for family use, or a home consumption market, the Kirtland should take the place of the Allen.

The Clarke has not fruited well with me this year, nor did I have opportunity to examine it elsewhere. The Philadelphia is all in productiveness that has been said of it, but the quality is so inferior, that I only wonder any good horticulturist could ever have the heart to advise his fellow-men to grow it. If a man could grow it and nothing else, then on the ground that any fruit is better than none, it might come in, but otherwise it smacks too much of Wall Street, and has too little of the goodness which belongs to the lover and grower of God's blessed fruits ever to have any hearty commendation. Like a crab apple or Windsor pear, it may do in absence of all else; but woe be to the consumer! Better to have looked at it admiringly, without any contaminating knowledge. I speak of it as when eaten out of hand. Cooking and sugar ameliorate, and so used it may be, and probably is, palatable, if not good.

The Duhring has killed down every year; and even under protection one winter, it failed, giving two or three meager fruits only. I pass it as a humbug.

The Franconia, Fastolf, Red Antwerp, etc., we know all about; and so knowing, know that when the canes are covered in winter, the crop is good, and the quality of Red Antwerp surpassed by few or none. The Hornet is sometimes hardy, but again is killed, so that, like the Franconia, it can not be depended upon without covering. Covered, it is a productive and profitable firm market fruit.

If among the perpetuals or ever-bearing sorts there is any desirable character, I think Belle de Fontenay stands at the head. True, it suckers most unmercifully; but the suckers can be cut away as easy as any weeds, and it certainly does bear abundantly, and of a good size and rich fruit. The Citawissa has good qualities; but of the two, for family use, give me Belle de

Fontenay. It is larger, looks better, is of superior flavor, and produces more berries with me. The Lindleyana has every year killed with me, even when protected. The Prosser I have not fruited. Through the kindness of a friend I have a plant of it, but it looks and grows as if it were sorry it did not keep near the ten acres that noised it to the world.

The varieties under numbers that have been sent by courtesy from Charles Arnold, Esq., to various amateurs in the States, are all good, but according to my test and comparison, only one—viz., his No. 1—is worthy of continued propagation. The canes of this are perfectly hardy, and the fruit is abundant, fully as large as figured in the HORTICULTURIST by Mr. Fuller, August, 1867, but not as conical. It is of a dull yellow color; and for those unwilling to give Brinckle's Orange a winter covering, it is the best light colored berry yet out. In other words, it is the best *hardy* light yellow raspberry known, and should be had by every lover of raspberries. Brinckle's Orange (let us keep the prefix of *Brinckle*, from respect to one of the most honest and enthusiastic horticulturists the world has known) is the very, very best yellow raspberry. It pays to cover its canes in winter; but if left uncovered, nine times out of ten it produces good crops of fruit, so good, that if the grower, like myself, has children, he will find it hard work to keep the fruit, for most unconsciously—"only just one," do you hear the child?—it will soon all be gone.

Let us now turn to the Black Caps. I have spoken of the Thornless. Mine was not obtained as a new thing, or as the Davison; and as I have not seen the Davison, may be all unlike; but a thornless raspberry is no *new* thing, nor do I think the lack of thorns any item, unless the fruit is of abundance and quality to equal varieties having thorns. The plants I have were from one selected by myself some years since, say eight, out of a cluster of wildlings which I was removing. I fruited my

first cane, found it early—in fact, one of the very earliest to ripen—abundantly prolific, of good size and flavor, not extra large, a good strong grower; and so finding, propagated a small number for my family supply. I consider it valuable for my family, and *measurably* so for market. The American or Doolittle all know about. It has done well hereabouts this year, and is undoubtedly one of our staple reliable sorts. Ellisdale, Surprise, Miami, and Seneca I have only had opportunity of examining on a small scale, and that under so high a condition of culture, I have nothing to say of them. I see, however, Mr. Fuller speaks confidently of Ellisdale; Mr. Husmann of Surprise; and others of Miami; but I, in my want of knowledge, have great faith in the value of Mrs. Wood as a hardy sort, extremely productive, of a fair size, mod-

erately firm, of good flavor, and maturing so as to continue the season two weeks later than the Doolittle.

Of blackberries I have very little this year to say. The New Rochelle or Lawton were nearly half killed last winter, but the remainder of the canes have fruited as of years before, large and sour. Crystal White killed all down, so did Kentucky White; and Claret, Mason's Mountain, Missouri Mammoth, and a host more of sorts, are growing for future notes; but while I yet think Dorchester the very best flavored, the richest berry, I grant the Kittatinny almost rivals it in flavor, is superior in size, more than three times as productive, and is the best, all in all, of any sort yet fully tested. Wilson is a market sort, but too inferior in quality for any good horticulturist's table.



THE SEDUM AS AN EDGING PLANT.

SOME years since we had a bed or border, in which we grew annuals, encircled with sedum album; and recently reading an article in the *Cottage Gardener* upon the use of sedums as edging plants, our mind was recalled to our former practice, and connected therewith we write to advocate their use to a greater extent than has been commonly practiced. An edging plant should be hardy, and such are nearly all the sedums; it should be of close, compact growth, and always green, which is the case with the sedums. In our case, we remember that the last year we made a part of our edging with sedum Sieboldii, which, as it flowered later and its flowers were more conspicuous, attracted greater notice than the common sort. A change of position caused our loss of the sedum edge; and our next planting of them was in delicate points and foreground of rock-work, where we have also found them a

very desirable plant. The great number of varieties now in cultivation give the grower a fine chance to give variety to the edge of beds in a flower-garden, and at the same time retain unity. In copying the descriptions and remarks of the writer in the *Cottage Gardener* we will add to his list recommended the following as desirable varieties, to be selected from the numbers catalogued: album Sieboldii, and three varieties of telephium.

"SEDUM CALIFORNICUM.—This fleshy-leaved houseleek differs from the kind so often met with on the tops of low buildings and other places where it is grown for its supposed medicinal properties, as the Californian sedum is of more sturdy habit, and the leaves are all deeply tipped with purplish brown. The plant seems to thrive well in most situations, but likes a dry and sunny one, increases freely, and bears transplanting at any season. It

forms an admirable edging to a small bed, and for places where a permanent edging is required it is extremely suitable. Occasionally it flowers, but not frequently, and when it does, the sturdy stem bearing a head or corymb of flowers is not without beauty. It is less disposed to flower than either of the two following species. In habit of growth it much resembles the common houseleek, the thickly-clustered heads pushing each other out of place, and by degrees rising into a sort of mound. As already stated, it is not particular as to soil, but likes the sun.

"*SEDUM GLAUCUM*.—Differing widely from the preceding, this low-growing, spreading plant quickly occupies its allotted space, and unlike many others may easily be kept in that line. It is of a pale whitish green color, and looks well all the year round. About the middle or end of May it flowers abundantly, the bloom being of a grayish tint, not by any means unsightly, but rather the reverse when viewed from a distance. The plant prefers a dry situation, and grows very fast, so that when once it has established itself it quickly covers the given space, and it does not seem to die off when it becomes old. Although I have had it in use for several years, I have never known the center or old portion of the plant die off or grow into an unsightly lump; on the contrary, it would preserve its original height

of about two inches, and the flower does not rise more than two inches higher. The plant appears to accommodate itself even to the most prominent point of rock-work, where there is only a very small quantity of soil. I have used it occasionally in winter gardening, and the gray hue of the plant was seen to advantage when the soil was dark-colored with moisture. For a permanent edging it is all that can be desired in habit.

"*SEMPERVIVUM GLOBIFERUM*.—In habit this is more like *sedum Californicum*, but less robust, and the whole plant is of a deep emerald green, the opening foliage looking like a partially-opened rose-bud. In most respects it resembles *sedum Californicum*, excepting that it flowers more freely, and the individual flower stems are remarkably sturdy for so small a plant. I believe it is less plentiful than either of the first-mentioned two, but I have had it for several years, and the hardest winter does not take any effect upon it. Like the other members of its family it delights in sunshine and a dry situation, yet with me it is grown in many instances as a permanent edging around small circular beds containing a young specimen *pinus* or other tree, and for such a purpose it, as well as the other two *sedums*, is admirably adapted. It may be admired every day in the year, which is not the case with many ornamental objects."

USE OF GYPSUM IN WINE.

SOME months since a friend presented me with a copy of "*Husmann on the Vine*;" and after a careful perusal I am convinced that it is a reliable teacher, and based upon actual experience. In the preparation of his work, Mr. Husmann, however, seems to have ignored the existence of European writers; and as I have reason to believe that the experience of some of the most reliable of the Continental observers may

prove of value to some of your readers, I propose contributing an occasional communication giving their views, and shall condense as far as practicable the language of the parties quoted. As doctors differ, I shall give both sides of the subject, when I deem such course warranted, and allow your readers to judge of the merits and demerits of the practice.

Our old friend "*Horticola*" translated

"Mohr on the Vine;" and I trust that he may be induced to favor American vignerons with a translation of "Mohr on Wine," as this scientific and valuable work should be placed within the reach of those who are not conversant with the German language.

The use of gypsum was known to the ancients, and its addition to wine has the sanction of ages. As experience is a valuable teacher, the use of this substance is worthy of consideration, more especially as the fault of the American wine seems to be the presence of too much acid.

The question of adding to an important article like wine a foreign substance is one of moment. This question was recently discussed by the Chamber of Commerce of Montpelier, and the experiments of Chancel, Berard, and Cauvey were referred to. The wine of Castelnau having been made the subject of experiment, gave the following results:

		Weight of Ashes.	
Natural wine.....		2.048 grains.	
Wine with pure gypsum.....		2.740 "	
Salts contained in the Ashes of the Wine.		Natural Wine,	Wine with pure gypsum.
SOLUBLE..	{ Sulphate of potass.....	.260	1.240
	{ Carbonate of potass..	1.092	.040
	{ Phosphate of potass..	.064	.015
	{ Phosphate of lime ..	.376	.990
INSOLUBLE..	{ " " "magnesia }		
	{ Alumina.....	.064	.064
	{ Lime.....	.064	.064
	{ Magnesia.....	.044	.064
	{ Silica and sesquioxyd of iron.....	.080	.080
		1.990	2.587

These analytical results require explanation. The solid residue of evaporation was burned and the ashes analyzed, as the most simple mode of determining the effects produced by the gypsum; but the results must not be received as given above, for the carbonate of potass represents the supertartrate of potass which was decomposed by the process of combustion, and consequently reduced in weight. The analysis settled the most important point — this was, that wine heated with gypsum contained no new ingredient, and that the gypsum added may be considered *nil*, because it is entirely changed into sulphate of potass.

From the action of the sulphate of potass on the human system, the slight quantity contained in wine so treated can have no injurious effect. The action of sulphate of potass, like tartar, is that of a laxative, and the quantity contained in wine so treated can exert no injurious influence whatever.

Count Odart asserts that if gypsum is used in moderate quantity, there could be no injury from it; but it is often used in the most censurable quantity. According to this writer, at the base of the Pyrenees it is added in the proportion of two pints and a half to twenty-two gallons of wine. It is acknowledged that the effect of the plaster is to preserve the wine from acidity, and to increase the intensity of its color.

According to Dr. Dijon (an enologue of standing), the only beneficial effect of the gypsum is to preserve from acidity the wines of the south, which are sweet and saccharine and liable to this degeneration. Wines, according to Dr. Dijon, saturated with gypsum lose none of their good qualities, and may attain a great age, as is evidenced by the wines of Roussillon and Spain; and it would be wrong to call such wines insalubrious on this account, as the small amount of free gypsum they contain is actually less than is found in many springs.

According to the experiments of M. Julien, the wine to which no gypsum was added at the drawing of the vat, was quite acid in the month of August, while that which received the gypsum was quite sound.

M. Bergasse (du Var), a proprietor and wine merchant, and an author of a treatise in which he discusses this subject in a masterly manner, remarks: "I was shocked the first time I saw put in practice a proceeding which seemed to belong to the ages of barbarism, and I even declined buying wine of proprietors who had made use of gypsum. But when I found that wines treated in this way had a more lively and decided color, and that if the presence:

of the gypsum could be detected at the drawing of the vats, the peculiar taste which it gave rise tended to disappear in proportion as the lees were deposited; when, besides, I found that after long voyages there remained not a trace of it, and that the wine possessed a fine color and decided softness, I became persuaded that the gypsum, without doubt, produced good effects under certain circumstances."

M. Joigneau, in *La lève de la Ferme*, discussing the wines of the south of France, says that the gypsum should be added at the time of the crushing the grapes, or immediately after. The proper quantity, according to M. Mares, is four pounds to 154 gallons of wine. In Rousillon and Narbonne the coarse, dark wines for mixing—the dearest and most sought after in commerce—have gypsum added to the vat in proportion of from nine to twenty pounds to 154 gallons of wine.

At the congress of vigneronns in 1845, M. Baumes stated that good wine to which gypsum was added loses its body and delicacy, becoming hard, sharp, and astringent; that it parches the throat and provokes thirst. He condemned it as injurious to health and conducing to fraud.

The advocates for the use of gypsum, on their part, assert that wine to which it has been added is better, of a more lively color, keeps better, and is every way superior to that without such addition. Such is the positive opinion of M. Mares. Over twenty years since, at the congress of Dijon, M. Cozalis Allut maintained that wines treated with gypsum clarified and kept much better than those which were

made without such addition. On the same occasion, M. Baume de Nimes stated that they had used the gypsum at St. Gilles, and since they had done so, the wines of the Cotiere de Vauvert, which were very inferior, were now sought after by merchants; and he affirmed that the gypsum prevented the ascescence of the wine made from the Bourre and the Aramon.

M. Maumene thus expresses himself on the use of gypsum: "Experience shows that the red color becomes stronger the more the contact of the wine with the skins is prolonged; but under such circumstances it is necessary to reduce the activity of the fermentation, and gypsum possesses the power of doing so. It transforms the salts of potass in the wine into insoluble salts of lime and soluble sulphate of potass. This change may be of great importance, because many chemists attribute to the tartar or supertartrate of potass the property of holding the ferment in solution, while the sulphate or potass does not possess this power. Finally, the gypsum very often contains a certain portion of carbonate of lime, and this carbonate, in neutralizing the acid of the tartar, assists, no doubt, to cause the deposition of the ferment which this salt held in solution."

The use of gypsum is an ancient practice, is common on the Continent, and has received the sanction of some of the best authorities, and it seems to us worthy of the notice of American vigneronns. To the uninitiated we can most positively state that any compounds resulting from its addition will be found innocuous.

AL FRESCO.

LONICERA PULVERULENTA.—Of the many varieties of upright tree honeysuckle none are to us more attractive outwardly and dissectively beautiful than the one under the above designation. Its petals are a deep rosy pink with a white edge,

that makes it attractive at first; and the more it is viewed, the more beauties are seen. Another year, make sure you have this variety in your group of tree honeysuckles.

RELATION AND EFFECTS OF POLLEN IN CROSS FERTILIZATION.

DR. HILDEBRAND, of Bonn, has lately been conducting some experiments with maize plants and making observations on the apple, to prove the direct influence exercised by foreign pollen on the properties of the fruit thereby produced. In Darwin's recently published work are a series of observations which go to prove that in fertilizing a plant with the pollen of a closely related species or variety, this foreign pollen not only acts on the offspring thereby generated, but may also exercise a direct influence on the shape of the seed vessel and seed of the flower operated upon—a fact previously ascertained by Wiegmann and others, which has, however, been abundantly attacked and criticised of late by Nægeli and others, and rejected as erroneous, but, it may be assumed, without good ground to the contrary. Among the observations quoted by Darwin the following passages occur: "As long ago as the year 1751 (*Philosophical Transactions*, 1751, p. 206), it was observed that when different colored varieties of maize grew near together, their seeds were mutually affected, and this is now very generally accepted in the United States as an established fact. Dr. Savi (*Gallesio Teoria della Riproduzione*, 1816, p. 95) carefully repeated the experiment. He sowed yellow and black seeded maize together, and in one and the same cob some of the seeds were yellow, some black, and others speckled, the different colored being either arranged in different rows or irregularly scattered." Without knowing anything of this observation, Dr. Hildebrand experimented with varieties of maize last summer, one with yellow and the other with dark brown grain, and as this trial was most scrupulously carried out, and led to a decisive result, a description of it does not appear superfluous. In the experiments

cited by Darwin, we find no guarantee that the plants employed were not raised from seeds which originated in a cross of two different varieties, so that the possibility of the seeds having become parti-colored, independently of the influence of foreign pollen, is not excluded. Foreseeing this probable objection to the value of his experiment, Dr. Hildebrand fertilized some of the flowers of a plant, raised from yellow seed, with its own pollen, and thus saved cobs whose seeds were exactly like those sown. There can be no doubt, therefore, that there was here a pure yellow variety of maize, and not a cross derived from two different varieties. Dr. Hildebrand then raised plants of the pure yellow variety, and fertilized the female ears with pollen taken from a plant of the dark brown variety, similarly raised. The consequence was that two cobs were obtained in which about half the seeds resembled that of the mother plant, or which were perhaps a little lighter in color, while the other half were of a dirty violet color, and scattered about indiscriminately among the others, showing that the pollen from the brown variety had exercised a direct influence. In a third cob, obtained through the same process, all the seeds were pure yellow, but on one side of the axis, between two rows of seed, there was a reddish brown stripe, so that in this case it had even asserted its power in altering the color of the axis of the fruit. All the female heads thus experimented upon were closely enveloped in paper capsules, and only partially opened to introduce the pollen, and immediately closed after each of the numerous applications, so as to avoid all possibility of any grains that might be floating about in the air coming in contact with them. Some other varieties of maize were also tried, but without success in

effecting a union. Pollen from the yellow variety failed to impregnate the brown variety, although the same plant set several cobs fertilized with pollen from the same variety. Darwin alludes to the same phenomenon as observed in the different varieties of apples, to which Dr. Hildebrand adds the following observation: "The year before last he noticed an apple on a branch of the Autumn Calville that stuck out among the branches of a neighboring Red Calville, the color of which for the greater part was the same as the remaining apples of the Autumn Calville, namely, yellow, with small red spots; but on one side, from the border of the calyx down to the stalk, there was a broad red band, just like the color of the Red Calville. Besides this outward resemblance there was also a number of red vascular bundles in the flesh beneath, which is quite characteristic of the Red Calville, so that this part resembled the latter apple in all particulars. This seems to be a case in

which the pollen of one variety acted upon the other, for there is no record of any other apples of the Autumn Calville variety with red stripes. For several years in succession Dr. Hildebrand has remarked a similar occurrence on a tree of the Strawberry Apple that was overgrown by a tree of the Red Stettiner, which he is inclined to believe was effected in the same way. In the face of the foregoing observations, and those collected by Darwin, it can scarcely be further contended that foreign pollen does not possess the power of effecting a change in the nature of the fruit resulting from its application, although it is probable that such influence is rarely exercised, or only between very closely related species or varieties. Nevertheless, so few trustworthy observations are on record that it is extremely desirable the question should be investigated further, as every additional proof might serve to convert some of the numerous unbelievers.—*Gardener's Chronicle.*



INCREASE OF HORTICULTURAL AND AGRICULTURAL INTERESTS.

It is both gratifying and surprising to note the rapid increase and extension of interests connected with the pursuits of rural life. But a few years have passed since the list of journals wholly devoted to Agricultural and Horticultural interests numbered less than a baker's dozen, and they were in the condition of a neglected strawberry patch, literally struggling day after day to keep their heads in sight. Now our list of journals, weeklies and monthlies, in the cause, advocacy, and instruction of the primeval and most blessed occupation of man is almost beyond count; and we no sooner note a new laborer, and get accustomed to his tone, than another appears, until we have lately come to the conclusion that our people have really

awakened, and while some may gamble in Wall Street, or other like marts, some may traffic and trade, etc., yet the blessings of a rural life, the prospect which it offers to a long and happy life, are rapidly becoming appreciated. South and West the people seem calling for more and more of reading matter relating to the garden, orchard, and farm, and their calls are met by new papers, and the enlarged size of the older ones, the formation of Horticultural societies, and the records of increased interest at exhibitions of those heretofore organized; all are most gratifying tokens of promises for the future greatness and continuance of our nation, for which we have reason to be thankful to the great Power that overrules and guides all things.

MAMMOTH CLUSTER RASPBERRY.

BY A. M. PURDY.

SUPPOSED to be a seedling of the Miami Black, with a rich dark scarlet bloom; extremely large. Charles Downing says: "Very much the largest black raspberry I have ever seen." Globular shape; very juicy and rich; season very late, the first picking being made this year on the same day that the last picking of Doolittle's was made, and last picking fully one week later than the Miami; surface, firm

—so much so that they were shipped to the New York market (300 miles) this season with perfect success; bush, very rank and hardy, with but few thorns. Its large size, great productiveness, and extreme late season of ripening, make it one of the most valuable sorts ever introduced, as it fills in a blank season for fruit long felt, especially by the market gardener.

APPLES FOR THE SOUTH.

WILLIAM SUMMER, in *American Pomological Report*, says of the cultivation and varieties for the South, as follows:

Fruits were first obtained from the best nurseries at the North and from Europe. The result was that all the winter varieties of apples proved to be autumn kinds, and most of these rotted and fell from the trees before ripening fully. We at once had recourse to the introduction of native seedling varieties, and these were soon found to be admirably adapted to our soil and climate; and so abundant were these varieties that we found difficulty, after we became engaged in the nursery business, to select from so many which were worthy of cultivation. The early Northern varieties almost invariably succeed well; and some of the winter varieties are admirable fall varieties, producing fair and abundant crops. In the mountain or upper regions of this State some few of the best Northern varieties succeed, such as the Baldwin, Northern Spy, and American Golden Russeting.

We give a few of our varieties produced in this State as worthy of general cultivation in the South.

18—SEPTEMBER.

CAROLINA RED JUNE.—This variety, now so generally disseminated, was produced within a few miles of Pomaria, by Henry Suber, and persons came a day or two's journey to get the cions for grafting.

AROMATIC CAROLINA.—Produced from seed by the late Johannes Miller. Medium to large, and very productive; flavor delightfully aromatic, and considered an acquisition wherever cultivated.

AUGUSTINE.—Large, red, rich, pleasant and productive; a South Carolina seedling of great promise.

EPTING'S PREMIUM.—Large, greenish with red stripes, flesh juicy and excellent; received the premium of ten dollars from the South Carolina State Agricultural Society.

EPTING'S RED WINTER.—Large, beautiful red, resembling a fine specimen of Carolina Red June; flesh yellow, with a rich pine-apple flavor; keeps well until Christmas.

LEVER.—Medium; ripe in November; keeps until April. A handsome red apple of best quality; tree remarkably vigorous; produced near Pomaria.

MAVERICK'S SWEET.—Large; ripe in November, and keeps well until March. A seedling produced by the late Samuel Maverick, of Pendleton, South Carolina; well known in Southern nurseries, and worthy of extensive cultivation.

COOK'S RED WINTER.—Medium to large, and of best quality; ripe in October, and retaining its flavor well until April. Produced by Jacob Cook of this district. Tree vigorous and a regular bearer.

HOOVER.—Large, oblate, dark red, juicy, acid, crisp, good flavor; ripens in October; tree vigorous and very distinct. Produced in Lexington District.

GREENING POMARIA.—Large, juicy, rich, sprightly flavor; ripe in November, retaining its flavor until March; produced at Pomaria, South Carolina, and one of the best of this popular variety.

HAMMOND.—Medium to large, color

green, flesh juicy; ripe in November, and keeps in great perfection until March; a South Carolina seedling worthy of extensive cultivation.

FERDINAND.—Fruit large, pale greenish yellow, flesh tender, ripe in November and keeps well; a seedling of Pomaria, worthy of a place in every collection.

SUSANNAH.—Large, oblong, oval, greenish yellow; flesh crisp, with a rich aromatic flavor; ripens in November and keeps till April. Premium apple of the State Agricultural Society 1859; produced at Pomaria.

CRAYTON.—Medium to large, fine flavored; ripe in November and keeps until April.

There are many other varieties; among them, Gore, Champagne Crab, White Crab, which are worthy of general cultivation; but our limits will not admit of even brief descriptions.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

F. W. WOODWARD, Esq.: *Dear Sir*—My communication in the August number of the *HORTICULTURIST*, upon the subject of Brahmas, grew to such dimensions as to influence me to omit some paragraphs of commendation which I desired to incorporate at that time. But, sir, allow me to say that the *Brahma* is a pretty "big thing," and that its *merits*, like the *bird itself*, can not be conveniently dissected and dispatched at a single sitting. You will remember that in the conclusion of my article I gave a very brief extract, from the London *Cottage Gardener*, referring to the popularity of these birds in England.

I beg now to quote a paragraph from the same journal, touching the merits of this well-tested and popular variety.

"Every frequenter of our poultry shows must have noticed the gradual and steady increase, from year to year, in the *Brahma* classes, showing a correspondingly steady growth in the popularity of the breed. In fact, no breed of fowls has made such rapid progress of late years; and with an utter absence of anything like 'mania,' this is a sure evidence that great and real merit is at the bottom of it; and such is certainly the case. As layers, Brahmas are in the very first class; as table fowls, they are much better than *Cochins*, though

not equal to Dorkings; and as sitters, while their behavior is unexceptionable, it may safely be said of them that the propensity to incubate occurs just often enough to be reliable and useful, without being troublesome. Such merits are quite enough to justify their great and growing popularity; and the more so when combined with the very strongest constitution, and capacity of bearing confinement, of any fowls we know of. It is these solid and useful qualities that are bringing the breed so rapidly into repute, and recommending Brahmas most strongly for family use, as the chickens may be reared with facility at any time of year."

Assuming, now, that I have said enough relative to this specific variety, I will conclude this article by attempting to give you the results of a portion of my experience and observation in the management, feeding, and diseases of fowls; and this experience dates back for considerably more than a quarter of a century.

In selecting fowls of any variety for breeding purposes, the prime object should be to get those with the best and most clearly defined characteristics of their specific kind, and to get those that have strong and large bones, with broad backs and full breasts, and standing firmly and squarely upon their legs. Be sure to get *symmetrical* and *harmonious proportions*; and don't sacrifice these to any fashionable clamor for either *short* or *long* legs, to *heavily-feathered* or *slightly-feathered* legs, or to any of that epidemic nonsense which sometimes sacrifices *form* and the *highest developments of beauty* to the demands of a crotchety judgment or the whims of a crude and uneducated taste. Remember that large birds, like the more spacious and pretentious edifices, must have *broad* foundations and *stronger* framework to give solidity and force, and *loftier* pillars to add grace and dignity, than the more diminutive and humble. And with birds *right in form, robust in health, strong in bone, and true in charac-*

teristics, there will be, generally, not only *success* but *pleasure* in the poultry-yard of the appreciative breeder.

Being fully satisfied that poultry, like animals and men, degenerate from "in-and-in" breeding, I have always made it a point to select cocks and hens as remotely related as possible for breeding together. I have generally allowed upon my yards an average of ten or twelve hens for each cock, and my success has always been so satisfactory as to excite no desire to depart from this habit. Mature cocks and hens produce larger and stronger chicks than those which have not attained to the highest force and vigor. Spring pullets, of the Asiatic breeds, will commence laying, generally, by the time they are six months old, and if well cared for they will lay through the winter. Good health and fair condition in hens is indispensable to the production of eggs in winter. A Brahma pullet's eggs will weigh from two to three ounces each, and to produce these from day to day, and to supply the waste of nature, demands something more than a snow-bank or the rarefied air of winter; but this is about as much as some people concede to their poultry. I am fully convinced that the ground (whether under cover or otherwise) is the best place, after the winter frosts are over, for hens to make their nests and sit. A certain amount of moisture seems to be needful for the eggs while in process of incubation, and this necessary moisture is supplied from the earth, which supersedes the customary sprinkling which many persons give to eggs under sitting hens. Hens which make their nests upon the earth are not annoyed by vermin, as is too often the case with those which have been put to sitting in boxes and baskets. I generally put thirteen eggs ("there's luck in odd numbers," you know) under a medium-sized hen, while hens of large size can easily cover fifteen. It is said that the *sex* of eggs may be ascertained by holding the egg to a lighted candle, in a

darkish room or other place, or before rays of sunshine through a crack or chink, with the large end uppermost; if the air-bladder is at the *top* of the large end, the chick is a male; and if at the *side* of the large end, it is a female. It is not difficult to determine the *fertility* of eggs after they have been sat upon for four or five days. To explain: after the hen has been sitting five days, take a lighted lamp (or use the sun-light, as referred to above) into a dark room, and holding the egg near to the light, between the thumb and forefinger of the left hand, and making a sort of telescope of the right hand, with the eye at one end and the egg pressing against the other, no light will be admitted except through the egg. If it is fertile, streaks of blood will be distinctly seen in the yolk; if the egg is quite clear, there is no vitality in it. It is well to know this fact,—for where two or more hens have been put to sitting at the same time, all the unfertile eggs may be removed, the vital ones consolidated, and a fresh clutch substituted under one of the sitters. Hens, whether sitting or laying, require *dust-beds* (these are their bathtubs), in which they may disport themselves at will, and cleanse themselves from the annoying parasites which sometimes infest their nests and roosts. When confined to circumscribed quarters, hens should have burnt or broken shells and bones, lime and gravel, for these are indispensable to the formation of the shells of their eggs, as well as to the preservation of their health.

I have a native fondness for poultry; and the leisure moments which I sometimes devote to them are given more for the *pleasure* I find in them than for any *profit* which accrues in their management. I am in the habit of feeding my adult fowls regularly and abundantly twice a day; the chicks are fed oftener, or food is so placed that they have access to it whenever the cravings of appetite prompt them to seek it. An ample run, the larger the

better, with a stream of running water, is best, as well for the health as the growth of poultry. Young chicks should be fed very early in the morning, so as to obviate the necessity of their wandering about through the high and dewy grass in search of something to appease their hunger. I believe it is now a generally conceded point, that feeding chicks upon the dough of Indian meal, and permitting their mothers to drag them at will through the high grass and the chilly dews of morning, are among the main producing causes of gapes, a disease which annually carries off multiplied thousands of them.

In this connection permit me to give two or three recipes for gapes, which are said to be very efficacious:

1st. "To kill the worms in the wind-pipe, which cause gapes, administer *pills of camphor*, about half as large in size as a garden pea. These pills should be administered one at a time, eight hours apart, till the chick is relieved. In slight cases, cures may be effected by giving the chicks water strongly impregnated with camphor."

2d. A writer in the *London Cottage Gardener* says a sure specific for gapes is found in "Twenty grains bol. armen., twelve drops spirits of tar, and one ounce of cochineal,—to be divided into pills of the size of a peppercorn, and given when the first symptoms of the disease appear."

3d. "Pour a small handful of wheat into a vial of turpentine, and let the same remain for twenty-four hours; then give a single grain, night and morning, to chicks affected with gapes. A single grain, in slight cases, will sometimes effect a cure."

The disease called Roup is one of the most common, and perhaps one of the most fatal diseases to which our domestic fowls are incident. My opinion is that it originates from sudden atmospheric changes, or by carrying fowls from the protection of comfortable rooms into exposed positions, thereby superinducing colds of greater or less malignancy; these

colds, if neglected, frequently terminate fatally. My reason for this belief I will state. Winter before last I purchased in this city a pair of large and healthy-looking fowls. I took them from the warm quarters where I found them and put them into a comparatively open house. In the course of two or three days I observed that the cock had a sort of rattling and discordant crow, which indicated trouble about the throat or lungs,—twenty-four hours thereafter he ceased to crow at all. Hereupon I took him in hand, washing his throat with a solution of strong alum-water and then giving him a large bolus of flour of sulphur and lard. I repeated this remedy two or three times, when his voice returned, and in three or four days he was well again. By the time the cock was restored, the pullet was attacked with the same disease, but more malignantly. Her head was swollen, her eyes running, with heavy fever in the head, and cankered mouth and throat. I washed her head and throat with castile soap and tepid water, then rinsed her mouth well with alum-water, and gave her a tablespoonful of sulphur and lard thoroughly mixed. This treatment effected a cure in about a week, but the hen was feeble for weeks after. Others of my hens became affected, when I recalled the old adage, that “an ounce of prevention is worth a pound of cure;” so I went to work and put a quantity of sulphur in one of their drinking vessels, and in another about a half pint of tar; from these vessels my fowls had to take their daily draughts. At this point the disease was arrested, but whether by the preventive means employed, or otherwise, I can not say.

Not a great while since a Mr. Lockrow, of Conn., stated in one of the agricultural journals, that “burnt borax, wetted up with water, and applied once a day, for three or four days, to the inside of the mouth of a fowl affected with canker, is an infallible remedy.”

E.

F. W. WOODWARD, Esq.: *Dear Sir*—In the August number of the *HORTICULTURIST* I notice an article upon Brahmas, in which the writer assumes that the Brahmas are the fowls most worthy the attention of farmers and fanciers, and places them at the head of the list.

Now, with all due respect to the writer, and acknowledging the Brahmas to be very fine and popular birds, I propose to say a few words upon the *Houdans*, which are birds of no ordinary merit, and are destined to become among the most popular fowls of the country.

This valuable breed of fowls derive their name from Houdan, a town in France, and are also natives of that country, where they are raised in large numbers for market. Their rapid growth and fineness of flesh commend them as table fowls of the highest excellence.

They have very broad and full breasts, with large, white or white-shaded legs, with five toes (although they sometimes come with only four); plumage, invariably black and white, spangled; crest of same color; tail, full and ample, well sickled, and carried rather erect; comb, two-horned in shape, slightly sprigged at the base, and in the cock showing well in front of crest; strongly developed whiskers and beards in both cock and hens.

In the spring of 1867 I imported a trio of these valuable birds, and although having but a small yard in the city, with not a sprig of grass, they furnished me with a good number of large white eggs, which I intrusted to the care of others for hatching and rearing. They succeeded, for various reasons, in raising but few.

This year I have kept the two imported hens and three pullets, and although I have not kept an exact account of the eggs laid, I venture to say that no hens could have laid more or better eggs.

With the exception of eggs sold, I have set them myself, and found them almost invariably fertile. (I will say here, that out of six eggs sent to Illinois, five hatched.)

The chicks, when hatched, look exactly alike; and says one writer: "The Houdan chickens are very pretty when in down and first plumage. The neck, back, and wings are black, the breast and under parts white. From the very first they are lively and hardy, feathering very early and maturing with marvelous rapidity."

I have not had a sick or feeble chick this season, and in my fifteen years' experience in breeding poultry never saw chicks grow so fast.

The Houdans, taking them all in all, are among the very best breeds of poultry for all purposes, and can not fail to be highly prized by those that possess them.

TAUNTON, MASS., Aug. 17, 1868.

P. W.

EDITOR HORTICULTURIST: In the June number of the HORTICULTURIST I observe that Dr. M. A. Harding, of Vernon Co., Mo., is of the opinion "that they have in that climate a dryness of atmosphere greater than any other of the States." If Dr. H. had accompanied me in a recent trip, 300 miles west of here, on the Pacific Railroad, he would have changed his opinion, at least so far as a portion of Kansas is concerned. If grapes do better in dry climates, then western Kansas is the banner spot of *all* the States. I was told by the employees of the railroad that but two light showers visited them this summer. In traveling a distance of twenty or thirty miles, in many places as far as the eye can reach in the dim distance of the horizon, you will scarcely see a tree or shrub. In other places, along the margins of creeks that empty into the tributaries of the Kansas River, you will often see narrow groves of verdant forest trees. Here and there are seen the "dead carcasses" of the buffalo scattered over this vast plain, while the smaller inhabitants are the elk, etc. Thousands of acres are covered with the towns of the prairie dog, an innocent-looking little animal nearly as large as the common rabbit; but they have no "lugs"

over their ears. One of our company shot at one, the ball passing so near that it stunned the poor animal, by which means it was captured.

I brought home with me some of the soil of this region, and comparing it with that of the valleys here, I can not help but think it just as fertile. The railroad track runs along a ridge for a great distance, yet, where the soil had been stirred in building the railroad, I found corn, that had been dropped accidentally by teamsters, growing luxuriantly. The weeds under similar circumstances were as healthy as in our own cultivated fields.

Without occupying space in giving reasons, I would say that I am inclined to believe that all the authors, traveling correspondents, etc., who have pronounced this region to be a "barren waste," "a sandy desert," "arid plains," etc., are entirely mistaken. That this region is destined some day to become one of the greatest agricultural and grape-growing regions of the United States, I have no doubt, notwithstanding the hundreds of travelers whose opinions I have read all believe to the contrary. My observations were principally made at the stations where we "laid over" sometimes an hour, too short a time, it is true, to examine the country thoroughly, but sufficient to form an opinion. If the managers of this railroad studied their own interests, they would send a "free pass" to every agricultural and horticultural editor in the United States, and make provision to board them while traveling. In this way would the great natural resources of this broad, fertile plain become known to those wanting homes, and soon their lands would be worth ten times their present value,—but that is their business, not mine.

At these stations there are "piled up" thousands of cords of wood, hauled many miles from the streams; here also are the water pumps, operated by horse and wind power. The depth of the wells is from fifty to one hundred feet. At one place

they had dug two hundred feet, but found no water; these wells, you must bear in mind, are on the highest portions of the plains, the ridges dividing the valleys; in lower land, no doubt but that water could be obtained nearer the surface.

Now, what is to be done with these broad prairies? Even in this immediate region the time has come when, as A. S. Fuller says, "growing forest trees requires not only agitation, but action," and our people are planting them. Then let strong arms seek these plains, and with the prairie plow stir the soil, plant 160 acres of forest tree seeds on every section, plant orchards, vineyards, etc., and in seven years there will be plenty of timber. It will not require a lifetime (as it does in the East) to produce good-sized forest trees on the rich soil of the West. In the mean time your herds of cattle can be pastured, and you can raise corn and other grains to support yourself. If necessary, you can dig wells and put in wind or horse power pumps and throw water over your farm. When the forest tree seeds grow, the climate will be the most delightful on earth. Your readers know the effect that trees have upon climate. My belief is that from the start the farmer could succeed in growing grain, but the benefit that the planting of trees would be to this country could not be estimated in dollars and cents. The United States Government would give 160 acres here to the settler who would live upon the land five years; and I have no doubt the railroad company would give an equal quantity, reserving one half to the company; but 160 acres there, in five years, with the trees growing that one man could plant, would be an independent fortune for the hardy pioneer who would settle thereon. Whether this broad expanse will, in our day, be dotted over with groves of forest trees or not is not for me to say; but of one thing I feel certain, and that is, at some distant period this region will be the garden spot of America, and

above all other places the home of the vine. I care not for the report of a young army officer or a careless newspaper correspondent who, weary and thirsty, have hurried over these plains, their whole thoughts being, "how soon will we reach the end of our journey?" Such men know very little about the capacities of the soil either for grain or fruit; and not even having an opportunity to have seen the scattered stalks of corn growing where the sod had been removed, or to observe the rank growth of different species of weeds, and at best but superficial observers in such matters, they have sent out to the world the idea that these plains are barren, and that nothing can ever be made to grow thereon; but such, Mr. Editor, is not your correspondent's opinion, although I have never found a man or seen the statement of any writer that will agree with me in this matter; and if I am the first to give publicity to the above views of the fertility of those plains, I will willingly bear any odium that may be thrown upon me in case of a mistake.

Yours truly,

A. M. BURNS.

MANHATTAN, RILEY CO., KANSAS, July 14, 1898.

LET US KNOW WHERE YOU LIVE.—EDITOR HORTICULTURIST—*Dear Sir*: Now that the subject has been revived again, in your August HORTICULTURIST, may I have room just to second the very wise suggestion of Mr. Yeomans, in the June number, that correspondents giving their experience with fruits or plants should give us also their *residence* or *locality*? In a land as broad as ours, with such a wide diversity of soils, and subject to such ever-varying conditions of season and climate, the great object in our fruit culture must be to adapt our selections to the sections suited to them; and whereas it is a truth of almost every-day experience that a kind which proves most desirable in one place may be comparatively worthless in another, the question of *locality*, in all criticisms upon the

success or failure of a certain variety, becomes one of the first importance. No doubt the simple facts that Mr. A—or Friend B—finds this apple the best for his market, or that cherry to bring the largest returns, or some few varieties of grapes to be the healthiest and most productive, are all of interest, and add just so much to the reputation of the varieties recommended; but does not this, after all, leave us in the dark on one of the very essential points of all, and fail to answer the first question that a practical man would ask, namely: What are the *localities* and conditions in and under which such fruits can be successfully grown, so that he may adapt the experience to his own case, and follow or modify it as circumstances require?

The objections presented to giving the full address are clearly well founded; but why not let the *locality* be given, which, to our mind, will meet the great wants of the case, and conceal the address under such a *nom de plume* as shall be an effectual shield from all the dreaded array of circulars, inquiries, and *bonus* communications, to which your humble servant is no stranger.

By the way, would not H. T. W. have expressed his point full as well if he had headed his article in your August number, "Is strawberry NEGLECT a success?" He well says, after giving the particulars of some cases of loss on a few crops, that "that this ill success comes simply from neglect and inferior culture (which is not culture) rather than from over-supply." If such treatment has ever brought success since the decree went forth, "In the sweat of thy face shalt thou eat bread," we are constrained to believe that the cases must have been very exceptional; and we are equally of the opinion that a good crop of strawberries, or any other healthful fruit of the best varieties, carefully gathered and assorted, and judiciously handled, will never fail to bring a *paying* price, which of course must vary to some extent with

the season and state of the market. Over-supply of such fruit there never has been, nor will there be, in our opinion, as long as the American people are wise enough to esteem, as they seem to now, fresh ripe fruits and heaven-painted flowers among the most grateful and healthful blessings given to make glad our sin-stained world.

OLD CASTLE.

GENEVA, N. Y., August 30th, 1868.

F. K. P., BLOOMINGTON, ILL., asks us to tell—1. What are the very best pears on quince? Also those most valuable as standards, if there are any new or noteworthy not set down in the books? 2. Also, "What is there new or noteworthy about cherries and grapes?" He also asks: 3. "How have Wilson's Early and Kittatinny blackberries proved in fruit this year?" 4. "What new raspberries promise best?"

[1. So far as relates to anything new in pears on quince, we have not a word; for as "one swallow does not make a summer," so neither do one or two seasons of success in fruiting any variety of fruit on a foreign stock prove anything as to its value. As we now stand, the Beurre d'Anjou, Doyenne Boussock, Louise Bonne of Jersey, and Vicar of Winkfield are about the only really and truly tested reliable sorts on the quince. True, we have good records of Stevens' Genesee; better, perhaps, of Saint Ghislain or Beurre Diel; most undoubtable authority that Duchesse d'Angouleme is the only one fit to have a quince root for its base. Again: equally good authority gives us Sieulle, Duchesse d'Orleans, and Onondaga as undoubtedly successful *permanently* on the quince root. As the definition of durability or permanency is one that in defining requires the object to which it relates stated, we shall leave you to apply it. The most valuable standard sort of cultivated pear, according to John J. Thomas, in the *Country Gentlemen*, is the Buffum, because of "possessing all the vigor and endurance of the old wild sorts." This is good authority;

and the author has taken a good type as well as a proven tree; but, nevertheless, we would not hesitate to plant trees of Fulton, Mary, Merriam with just the same confidence in them, so far as destruction by blight or climatic influence would result.

2. We know of nothing really new or noteworthy in cherries. One or two seedlings shown at the Cincinnati Horticultural Society, and two spoken of by Mr. Elliott, of Cleveland, are all on our record of the season. Your question of grapes is too soon for reply. With exception of the old vineyards about Cincinnati, the report promises a more than average crop, and with less of rot or mildew. Mottled, Iona, Israella, Adirondac, the Rogers' numbers, etc., etc., are all fruiting finely East and West; and if nothing happens, we may look this season for the greatest show ever had of grapes in old and new varieties.

3. The Kittatinny Blackberry is, so far, a success—the best yet out. Wilson's has too hard a center for family use, but is showy for market.

4. The Naomi promises, from all we can learn, as the best among reds; while Arnold's No. 1 stands high as a hardy caned white or yellow fruit. In black caps, or that class, Ellisdale, Surprise, Mrs. Wood, and one or two more, are highly spoken of by good horticulturists.]

SEEDLING PINKS.—A friend recently called our attention to his bed of seedling pinks, claiming them among the most beautiful ever grown. An examination satisfied us of the correctness of his statement, as we found blooms large, compact, and regularly round in form; some with fringed petals, others without; some almost black, so dark was the shade of rich crimson; some pure white; some creamy yellow flaked with lilac purple; one with the edge of petals deep rich crimson shading down to a light rose color at the base; one, delicate light salmon, with a broad, deep pink stripe from outer to inner edge

of petal. There was not a really poor flower in the lot. The success and uniformity of good flowers obtained by our friend he attributes to the "very superior character of the seed, which he obtained of James Vick, Rochester, it evidently having been gathered by some careful and judicious hand from good stocks, and not as the majority of seeds are, from any and everything having seed." Of this we have nothing to say, only to add our item of testimony to Mr. Vick's general reliability; but certainly we never saw a much better collection, even of named sorts, and therefore put the case on record.

NEWBURG BAY HORTICULTURAL SOCIETY.—The eighth annual exhibition of this Society will be held at Newburg, September 29th and 30th. Premium list can be obtained by addressing D. Smith, Esq., Newburg, N. Y.

EDITOR HORTICULTURIST: Can you give me any information about the "Miner Plum?" Some one has said it is not injured by curculio. Perhaps this is the kind after all.

A SUBSCRIBER.

CORDEX, August 5th, 1868.

[The Miner plum is a seedling of a wild variety, originating at or near Lancaster, Wisconsin. We have our doubts as to its being curculio-proof in sections where the curculio abounds. Other wild plums, with equally thick skins, are not so. We have not been able to fruit the variety in this locality yet, but hope to do so next season. See November HORTICULTURIST, 1867, for illustration and description.—ED.]

THE NIGHT-BLOOMING CEREUS.—In October, 1846, Mrs. T. W. Williams brought from Avon Springs to New London a slip from a plant of the cactus species, then comparatively rare in our country—the *Cereus grandiflorus*, or Night-blooming Cereus. It was a mere stalk, about six inches in length. After nursing it for some time, and finding the heat of her

conservatory insufficient to bring it to the flowering point, she transferred it to the green-house of Mrs. H. P. Haven, where it still remains, and has bloomed regularly every year. It now fills a large box with its roots and stems, and has five or six main stalks that are nearly three yards each in length.

In its first years of bloom it bore only a single flower, and its opening was generally watched with great interest. July 28, 1851, the expanded blossom was visited by some seventy or eighty persons. In 1854 the number of blossoms had increased to *six*. In 1857 it had *ten* in all, and *eight* of these appeared in one evening, all unfolding together with artistic precision. In 1859 there was a still more beautiful exhibition; July 22, *twenty* full blossoms were expanded at once, shooting from different parts of the square stems and presenting a magnificent display of floral beauty. Notice having been given to friends and neighbors of this expected show, it was witnessed by a throng of admiring visitors, and accounts of it published in the local papers of the day.

This is the largest number of blossoms that the plant has exhibited at any one time, but the whole number produced increases rapidly from year to year. In 1866 it developed about sixty blossoms, spreading over a period of five weeks. The present year (1868) it has exhibited a much larger number, furnishing a series of splendid shows. In one evening *nineteen* blossoms were displayed, *eighteen* at another, and again, some days later, *fifteen* in one evening and *seven* in another, with lesser numbers at other times, amounting in all, between July 9th and August 12th, to *eighty*, and not an imperfect flower among them, or a bud that failed to mature and expand.

F. M. C.

SEEDS OF CHERRIES. — C. G. Patten, Charles City, Iowa: Your request for information as to where seeds of Louis Philippe and other choice Morellos could be obtain-

ed, came in due course. As our suggestion was original, we have no knowledge of any person having saved seeds to meet its requirements. We advise you to write to Charles Pease, Esq., East Rockport, Cuyahoga Co., O.; F. K. Phoenix, Bloomington, Ill.; and James Vick, Rochester, N. Y., relative to securing seed for another season.

DOGS! — F. W. WOODWARD, Esq.: *Dear Sir*—In glancing through the pages of the *London Cottage Gardener* to-day, my attention was arrested by an article from a writer styling himself "WILTSHIRE RECTOR," entitled "My Dogs." A perusal of this article afforded me so much gratification, and was in such accord with a portion of my own experience, and at the same time paid such a kindly tribute to this much abused but most intelligent and faithful friend of man, that I determined to copy a few of its paragraphs and submit them for your approval, and the perusal of your readers, if they are deemed worthy and appropriate for your pages.

In almost every country, and from the earliest recorded history, the dog has been the symbol of *fidelity*, the friend and companion of man, and the guardian and defender of his home and his flocks. He has illustrated his *fidelity*, his *sagacity*, and his *courage* so often, as to rear monuments in nearly all nations to his honor; and to win the patronage of many noble and gifted minds. It will be remembered that Alexander the Great built a city in honor of a favorite dog;—that the Emperor Hadrian decreed the most solemn rites of sepulture to another on account of his sagacity and fidelity. Those who have once read them will readily recall Byron's inscription on the tomb of his favorite dog, in Newstead Abbey.

" ——— poor dog, in life the firmest friend,
The first to welcome, foremost to defend,
Whose honest heart is still his master's own,
Who labors, fights, lives, breathes for him alone:
To mark a friend's remains these stones arise—
I never knew but one, and here he lies."

The love of Scotland's great novelist and

poet, Sir Walter Scott, for dogs is proverbial—and he was rarely ever seen about home without having one or more of these faithful and attached friends by his side.

The dog is the only animal which seems to take a real delight in associating with man and making himself subservient to his wishes, and that has gone with him over the whole habitable earth. The poet Burns says: "Man is the God of the dog—he knows no other; and see how he worships him! With what reverence he crouches at his feet—with what delight he fawns upon him, and with what alacrity he obeys him!"

But in my admiration for this disinterested and intelligent friend, companion, and servant of man, I find that I am growing unnecessarily voluble, and will yield to the extracts from "Wiltshire Rector," premising, by the way, that a good dog can show himself up to much higher advantage, with opportunity, than even the partial friends who herein commend him.

"Reader, if you have never read Dr. John Brown's 'Rab and His Friends,' the best bit of dog literature ever written, go out and get a copy; it will only cost you sixpence, and you will thank 'WILTSHIRE RECTOR' with eyes running over with happy tears, for introducing you to that wonderful 'bookie,' and for giving you an hour's intense pleasure, to be renewed as often as you read it.

"Well, Dr. John Brown tells us, 'A dog in a house is a perpetual baby.' Think of that, ye whose hearts are yearning to love something—think of that, ye now not young fathers and mothers, who remember the joy in the house that baby No. 1 gave you from the first hour of its baby life, until baby No. 2 took its throne and reigned in its stead. But to have a perpetual baby—a toy—a plaything—a something knowing much, yet not judged accountable, and so a large margin given to do as it likes, and all it does gives you pleasure! A perpetual baby—that is, a dear good dog,

who looks at you with intense loving eyes, all affection in their clear hazel, brown, or black depths—a being who obeys you implicitly, waits for the hour at the door of the house at which you call—a being who loves you just the same whether you are rich one year and very poor the next—who into the bargain takes upon him to defend your house, your home, your castle; and if you have no home, he does not leave you—no, he all the more defends you, yourself, as much as to say, 'Cheer up, my poor unfortunate master; you have got no home for me to take care of; never mind, I will concentrate my attention—I will watch and take care of *you*.' Yes! a good affectionate dog, to whom you are everything, who loves you with his great affectionate heart. Of such a one the old proverb ought to be strictly kept true, 'Love me, love my dog.'

"Dog and man, how suited they are to each other! And how they contribute to each other's happiness! as in a happy marriage each party is made the happier. Man has not domesticated or reclaimed any animal so perfectly as he has the dog, for the dog does not even wish for liberty. His feelings are won over. He is no longer, as naturally, a gregarious animal. He passes by other dogs with a brief 'How do you do?' but he knows better than to forsake man and herd with his species—unlike the horse, who kicks up his heels in the pasture and fain would not again be stabled. But the dog does not even wish to be free. Man has raised him in the scale of existence. He is more sensible, intelligent, and sagacious than his wild ancestors (half wolves, perhaps). His heart has been won, and his heart is better since it was won; so he no longer wishes—even wishes to be free.

"The first dog I loved was scarcely mine, for I was rather his property, for certainly I was much his inferior. My childhood's home was one which for many years never lacked an infant within its walls, and each little one was duly presented to

old 'Keeper,' for that was his name, who sniffed and sniffed, and licked the tiny thing's face, and looked as if he knew all about it; his old brown eyes saying, 'Ah! I understand! That child belongs to the house, and I'll take care of it—all right!' And he did. Keeper romped with it, kept it happy and out of mischief, save mischief with him, such as putting its tiny hand in his mouth and poking straws up his nostrils, both deeds permitted with good-humored patience." E.

PEACHES AT THE SOUTH.—P. J. Berckmans, one of the best of our Southern pomologists, says of the peach in the American Pomological Society's Report as follows:

"This fruit *seems* to be indigenous to the soil, as it is everywhere found in abundance, and of most vigorous growth. Except the borer, the tree is free from insects, or any disease whatever. The former can be easily guarded against, by hilling up the trees with earth early in the spring, leaving this cone undisturbed until November, then leveling off again, and repeating this operation yearly. The hard bark of the trunk of the tree prevents the insect from puncturing it and depositing its eggs. Orchards thus treated have been free from borers for years past. The curculio has, however, of late been very destructive to our fruit. Heretofore, it only attacked the nectarines and some peaches of very delicate skin; but the past year, no variety, however downy, was free from its depredations.

"The Yellows are unknown here, and it is a remarkable fact that a contaminated tree brought from the North regains its vigor as soon as transplanted here. Immense quantities of peaches are raised for distilling and drying, and the supply of New York market. This latter feature of peach-raising has again been revived, and from present appearances bids fair to become an important and lucrative business along the main railroad lines, and especially in the

lower portion of the State. Peaches grown in this section can be laid down in New York seventy hours after being gathered, and will net a handsome profit to the cultivator. For this special purpose, early varieties alone are advisable to plant; so that the bulk of the crop is sent off before Delaware and Maryland fruit is ready for market. The best varieties for shipping are Early Tillotson, Large Early York, Early and Late Crawford, Stump the World, and Columbia. Hale's Early bids fair to be the most profitable kind, but has not been sufficiently fruited to enable me to give a decided opinion as to its shipping qualities. We have early Southern varieties vastly superior in quality to most of the above, but they are too tender in texture to stand carriage. Clingstones are unfit to carry to distant markets. They can only be appreciated to their full extent when picked from the tree fully ripe. The country abounds with seedling peaches, the bulk of which is inferior; but as there are several types of peaches which reproduce almost identically by seed, there are large orchards of seedlings, every tree being nearly alike and of good quality. Such are the Indian, Lemon Cling, Heath types, etc.

"Of the Indian types there are many varieties; some are yellow freestones, like the Columbia; others, blood-red clingstones or white clingstones; all, however, have the peculiar brown red stripes upon the fruit, which characterize the type. This type is much esteemed, as it seldom produces an inferior peach, and, strange to say, it seldom hybridizes with other varieties. The Lemon Cling type seldom varies by seeds; it never produces a freestone, but ranges from pure white to dark orange flesh; and this is always red at the stone. The Heath type, known here as White English, is very popular; its varieties are numerous, but all have a family resemblance, and are white to the stone. In general, all the clingstone species, whose flesh is white through, are sweet; and those

being red near the stone, subacid, or even acid. For distilling, the clingstones are preferable, as they yield more juice than the freestones. Three bushels of good clingstones will yield, on an average, one gallon of proof brandy, whereas the bulk of freestones will not yield over one half that quantity.

"The peach will produce the second year from the seed, and when properly cared for, will live twenty-five to thirty years. The great fault with most cultivators is, that they allow the trees to overbear upon the extremities of the branches, the weight of the fruit causing these to split and break off. Annual shortening-in is of the utmost necessity, and unless this is attended to, the peach-tree will soon decay. Spring frosts are often very destructive. As a preventive, it is the custom to build fires in the orchards, so as to create a dense smoke. By this means many crops are saved. The season of maturity begins June 10th to June 15th, and some late varieties keep until the 10th of November, a period of nearly five months."

TRAINING GRAPES.—Is there any objection against the training of the long arms of grapevines (in the vineyard), pruned according to the annual renewal system, very low, say within one or two inches of the surface? Then the shoots being annually cut off an inch or two from these arms in the fall would much facilitate the covering of the vines with earth for winter protection, as I have ever found it hard, or impossible, to bend old vines.

Delaware and Concord grapes flourish splendidly on the Ottawa. Also, White Sweetwater will ripen here eight years out of ten. No mildew or diseases of the vine or grapes are known here.

An answer to the above query in the *HORTICULTURIST* will oblige,

Yours truly,

J. F. CASS.

L'ORIGINAL, CAN.

[We see no objection to training the horizontal arms of the vine within six inches

of the ground, except that of its placing the fruit so near the ground as to cause it often to be bespattered with dirt. Our idea of *annual* renewal system, however, is evidently very distinct from yours. We cut away each autumn all the old two or more years' old wood; and as our young canes have been started and grown from eyes two to six inches from the surface-crown of the root, there is no trouble whatever in laying down the young cane. We are glad to hear you are exempt from all diseases of the vine. May it ever be so with you.]

LACHENALIA TRICOLOR.—Amidst the numerous varieties of bulbous-rooted plants that adorn our green-houses during the earlier months of the year, few deserve or are better entitled to the gardener's attention than the one named above. Their beautiful spikes of trumpet-shaped red and yellow colored flowers, whether intermixed with other plants or otherwise, are sure to be attractive. Unlike the hyacinth, narcissus, etc., they do not require to be purchased annually, that sound and good flowering bulbs may be secured, as the *Lachenalia* increases every year in number and strength, if the grower will bestow some degree of care. It is time now to turn them out of the pots in which they flowered in the spring, and to re-pot them for next season. In sorting them, the stronger bulbs are selected, and five of each planted in a six-inch-size pot, commonly known as 32's. Good drainage and clean pots are indispensable. They thrive best in a strong loam (not clayey), but of a silky or soft texture; add to this about a fourth part of dry, rotten manure, with a little sand. If the manure be decayed cow-dung, so much the better, provided it is free from worms. They should be placed in a cool pit, the object being, in the present stage of their growth, to check too rapid an evaporation in the soil, as frequent waterings, when there is not an abundance of rootlets to absorb the

fluid, is an injury alike to the plant and the soil. When they have begun to vegetate freely, expose them more fully to the light and air; their rich, dark green speckled leaves will then soon begin to strengthen in growth. That a healthy vigor may be preserved during the winter months, place them on the upper shelf of a green-house, near the glass, but do not neglect carefully watering them. As the flower-spikes become perceptible, allow the pots as much room as your means will admit of for the display of their vigorous foliage. During the blooming season, shade on hot, sunny days; this will preserve the color as well as the flowers. When they have ceased blooming, gradually ripen the bulbs by reducing the quantity of water, till you wholly discontinue the supply, when they may be put in any corner of the green-house till the period of disturbing them as above recommended. The offsets or smaller bulbs may be planted, ten or twelve or more in number, according to their size, in a five-inch or 48-sized pot; they will not all flower, yet you may increase your stock of strong-flowering bulbs for selecting from in the ensuing season. The *Lachenalia* will submit to be forced, but it is at the expense of weakening both the bulb and the flower-spike.—*Gardener's Magazine*.

THE FARLEY BLACKBERRY.—Mr. A. M. Burns, of Manhattan, Kansas, writes us regarding a blackberry which he has known some years as the FARLEY. Its origin and history seem untraceable, beyond its having first been received by Mr. Burns from a friend in Pennsylvania, who obtained it of a man by the name of Farley. Mr. Burns states it to be "not quite as large as the Lawton," but to "ripen *two weeks* earlier, and in quality the best berry grown." We hope he will give us a more perfect account of it for our readers, as accounts of new and valuable varieties of small fruits are of great interest to the commercial as well as to the grower for family use.

THE "AMERICAN ENTOMOLOGIST."—We have received the prospectus of this new monthly journal, to be issued September 1st, 1868, under the editorial care of Benj. D. Walsh, M.A., of Rock Island, Illinois, and Chas. V. Riley, of St. Louis, gentlemen who have made entomology their study for many years, and who occupy official positions in Illinois and Missouri as State entomologists. Price, \$1 per annum.

SEED FOR LAWNS.—This month is a good time for seeding down new lawns. Let the ground be first thoroughly prepared, that is, dug at least one foot—better to be eighteen inches—deep, and all of this depth to be of good rich loamy soil, not ten inches of poor clay or sand with two inches of top dressing, but all the depth of good loam suitable for growing a heavy crop of corn or a bed of carrots; make the whole depth and quality of soil uniform, without regard to the rise and fall of the grades; in other words, do not form the soil in one place fourteen inches deep and in another only ten, and then calling it an average of one foot; because the lawn hereafter will tell of your work by its exhibit of rich green grass in the deep soil places and of yellow dried spots in the shallow ones; but make it all an even, regular depth, whether on a rising knoll or a low level grade. Rake and pulverize with the roller all the top surface as fine as an ash heap. When ready for sowing, procure for one acre—or in proportions according to the surface to be seeded—two bushels of Blue Grass, two bushels of Red Top, half a bushel of Creeping Bent, and one eighth bushel of White Clover; mingle them well together, and then divide into three equal parts. Sow first one part; then go over the ground with a fine rake, say from north to south, raking the whole surface back and forth to lightly cover the seed; then sow another third portion of the seed, and repeat the raking cross-wise, or from east to west; then sow the last re-

maining portion of seed, and with a heavy roller, roll or press the whole surface, both for the purpose of cementing the seed in the soil for vegetating, and also to prevent measurably the wash liable to accrue from rains. We sometimes see advice of one bushel of seed to an acre; again, of two or three, with a sprinkling of rye, as they say, to shade the young grass,—the adviser probably forgetting that the strong, rank roots of the rye do more injury by extraction of moisture and food from the roots than the benefit, if there is any, obtained from its shade. Loudon, we believe, was in the practice of using from six to eight bushels of seed to the acre; Downing, from four to six; and our experience of twenty years over many and many an acre is, that if a good firm lawn is expected the first year, it is always unsafe to use less than four bushels, and that the addition of one or two bushels more well pays in the thick nest of grass readily grown and the lessening of labor in extracting weeds, that, where no grass is, will surely grow. A top dressing of bone meal, ten bushels to the acre, with two bushels of salt, and one half bushel of gypsum (plaster), will also always be found a profitable expenditure.

GATHER pears as soon as the stem will separate freely from the tree by gently raising the fruit. Place the pears in single layers and cover with flannel, when a few days only will elapse before they will ripen and color up even more beautifully than when left upon the tree, besides retaining, or rather developing, a more juicy character,—so that some varieties, of only second or third quality, when ripened on the tree, become nearly first-rate when house ripened.

LARGE EXPERIMENTAL ORCHARDS.—Our Western friends excel in large collections of native and foreign apples, which they are growing and fruiting toward establishing knowledge of their comparative values at the West, as well as aiding

toward correction of nomenclature. We know of quite a number of gentlemen having four to six hundred sorts; but the two largest collections, to our knowledge, are those of A. M. Lawver, South Pass, Ill., who has somewhere about 1,500 sorts of apples, and E. H. Skinner, of Marengo, Ill., whose collection numbers over 2,200 named varieties of apples, gathered from almost every part of the earth.

“STEVENS’ GENESSEE is a poor pear, rots at the core, is never very good, and never was worth growing for any purpose.” We find the foregoing in the Fruit Committee’s report for Massachusetts, published in the American Pomological Society’s Transactions, and are not a little surprised at it. We have yearly met the pear, and eaten of it grown in many sections of the country, for over twenty years, and our experience with it has always been to place it as certainly in the pomological rank of “very good;” and often, when grown on light dry soils, we have found it to rank almost first in quality and of extra superior size and golden yellow beauty. We will venture the statement, that long after Shurtleff’s New Seedling pears have been put in the condemned list, where they belong, that Stevens’ Genessee will remain on the catalogue as a valuable sort for many sections.

EARLY COLORING OF GRAPES.—In our notice of grapes, this and former years, we find their first coloring about as follows, in order as we name them, viz.: Sherman, Mary Ann, Miles, Adirondac, Maxatawny, Ives, Logan, Hartford, Clinton, Concord. This early coloring, however, does not always indicate early ripening, as the Concord always really matures before the Clinton; so, also, the Hartford before the Maxatawny. But sometimes sales may be made of unripe fruit to those whose palates will bear severe pressure to serve a pride in saying, “I had grapes for dessert at my table to-day.”

GOLDEN CHAMPION GRAPE.—This in all respects extraordinary grape was raised by Mr. Thomson, gardener to his Grace the Duke of Buccleuch, at Dalkeith Palace. "It was," Mr. Thomson states, "raised about five years ago from a seed taken from a grape that was a cross between the Champion Hamburgh and the Bowood Muscat." The bunches are large, of a slightly tapering form, and heavily shouldered. The stalk of the bunch is stout and fleshy; that of the berry stout and warted. The berries are extra large, obovate or ovate, slightly pointed; in some instances almost round; the skin is thin; the color clear pale yellow or golden, inclining when fully ripe to deep amber on the most exposed side. The flesh is firm, yet remarkably juicy and tender; the flavor rich, somewhat of the character of the best ripened Black Hamburgs, but exceedingly luscious and agreeable. In short, the fact of its emanating from the source already mentioned is in itself a guarantee of its great excellence.

The plant is remarkably free and robust in growth, and very prolific, requiring exactly the same sort of treatment as the Black Hamburgh. The leaves most nearly resemble those of the Muscat; they are slightly lobed and very deeply and sharply serrated, and the leaf-stalks have a reddish tinge.

This is indeed a noble grape, and one which will take the highest rank among white varieties. It supplies a desideratum which has long been felt, viz., the possession of a white grape of easy culture like the Black Hamburgh, which latter is, *par excellence*, the very best constituted grape in cultivation, the gardener's sure and trusty friend. The berries of this new acquisition are of the very largest size, resembling in that respect huge Canon Hall Muscats, while the bunches are as large as those of the best variety of Hamburgh, the Victoria, or Frankenthal.

Three bunches of this splendid new variety were exhibited at the meeting of the

Fruit Committee of the Royal Horticultural Society, which took place on the 8th of July, where it was unanimously awarded a first-class certificate. It may be added that this fine grape has passed into the hands of Messrs. Osborn, nurserymen, Fulliam.—B., in *Gardener's Chronicle*.

SUTTON'S RINGLEADER PEA.—A writer in the *London Journal of Horticulture* claims the above-named pea to be at least ten days earlier than any other of the early varieties.

RASPBERRIES IN ROWS.—We notice A. M. Purdy, an extensive grower of raspberries, states that he prefers growing the canes in rows or hedges rather than in hills, as being more self-sustaining. This is in accordance with a practice we named last year as followed by a good cultivator both with raspberries and blackberries, and has been our own practice for some half dozen or more years. A light dressing of rotted compost or manure, sprinkled among the canes in autumn and forked in lightly in spring, we also find to pay well in the crop of fruit. Mr. Purdy also states that he practices cutting in the new growths when about three feet high, as we have repeatedly advised, and finds it successful.

NEW BOOK.

TODD'S COUNTRY HOMES. By S. Edwards Todd, author of Todd's "Young Farmers' Manual and Wheat Culturist." Sent postpaid from this office for \$1 50.

A large 12mo volume, of about 600 pages, with numerous designs of villas and cottages, with directions to beginners to aid them in the erection of all kinds of wooden buildings, as well as those of brick, stone, and concrete, with bills of necessary materials used in the construction of the same. Plain and practical directions are given for digging and stoning wells, making cisterns, and doing all kinds of plain painting, whitewashing, and kalsomining, etc., altogether making a book of great value to those living in the country.

THE HORTICULTURIST.

VOL. XXIII..... OCTOBER, 1868..... NO. CCLXVIII

SUMMER PRUNING THE VINE.

IN perusing the American journals, I have repeatedly noticed inquiries relative to summer pruning the vine. In the August number of the HORTICULTURIST a correspondent remarks: "I am getting a great quantity of foliage; shall I cut it away, or shall I let it run?" It seems to me that this mooted question requires ventilating; and as it has not received from authors the attention its importance demands, I propose breaking the ice; and trust that some more competent person will discuss the question *in extenso*.

Now, Mr. Editor, some of your readers will exclaim that that fellow, Al Fresco, has a fresh attack of "Vito mania." I shall plead guilty to the charge, and in extenuation simply remark, that to your humble servant, a vine, like a beautiful woman, is a "thing of beauty and a joy forever." I am not alone in my weakness, for from the most remote periods of antiquity the vine has been viewed as the type of plenty and the symbol of happiness. As the dog, in the animal kingdom, is the friend and companion of man, so may the vine among vegetable productions be said to be his associate and solace; for wherever the Caucasian race finds a home, there also will be found the vine with its

welcome shade and tempting clusters. Like man himself, the vine seems designed for cultivation and improvement; it is culture alone which develops the latent powers and qualities which in its wilding habit are never called forth. Like a weak, dependent thing, we find it in its native woods clinging for support to its fellow-denizens of the forest, festooning their trunks and branches with its beautiful foliage, or hanging in long tangled masses from the lofty boughs. It is this dependence upon extraneous support, and the capability of improvement by care and culture, that calls forth in the true student of nature a more than usual interest,—I may say affection,—for the vine. From no other of the productions of the vegetable kingdom will his care and attention receive a more grateful return than from this, his interesting and pliant nursling. If the cultivation of Flora's gems has an ameliorating influence on the heart of man, removing his thoughts from the cankering cares of the world, the cultivation of the vine is pre-eminently fitted to solace and soothe his wearied spirits.

When the farmer resolves upon the destruction of a hedge-row or nest of brambles, he resorts to summer pruning,—for ex-

perience has taught him, that if bushes, vines, or brambles are cut during July or August, that the succeeding year's growth will be less luxuriant; and that if the same treatment is adopted for several successive years, the bushes and brambles will be *non est*. The laws of vegetable physiology which apply to the bushes and brambles, equally apply to the vine. There are no specific set of laws applying to brambles and another to the cultivated grapevine,—on the contrary, a beneficent Creator has made his laws comprehensive.

Every act of the vine pruner should be governed by and based upon the laws of vegetable physiology; yet how often do we see these simple and admirable laws violated! Judicious summer pruning is absolutely necessary if we wish to obtain perfect fruit; but the disgraceful mutilation of the vine, and the wholesale destruction of the foliage we so often witness, is, to say the least, horticultural barbarism. That acute observer and accomplished vegetable physiologist, Dr. Lindley, remarked, "That he who would remove from a plant in full bearing a portion of its leaves, with the view of hastening the maturity of its fruit, would be acting with about as much reason as one who should take out part of the lungs and bowels of an animal by way of improving its digestion." But some of your readers will exclaim, "What nonsense! for my vines have grown so long, and the branches and leaves are so thick, that neither sun nor air can reach the fruit; and without sun or air the fruit can not attain perfection." All very true; and persons who allow their vines to arrive at this condition must do so through ignorance or sheer neglect. If the former, they should at once seek information regarding the true principles of pruning and training; but if the latter, they are unworthy to be the possessor of such a plant as the vine.

That acute observer, Cavoleau, correctly remarks: "It is with reason that the leaves are called aerial roots, for they inhale from

the atmosphere much more nourishment than the roots do from the soil; they not only fulfill in vegetables all the functions of lungs in animals,—they are also the stomach of the plant, and the aliments which are elaborated in them are decomposed and recomposed like those in the stomach and intestines in animals. Brought to this state of perfection, these alimentary juices descend toward the roots, and in their passage they deposit all the materials necessary to form wood, bark, oil, resins, mucilage, and all the other vegetable principles. In short, it is this descending sap which furnishes to the fruit its juice, perfume, and all that makes it valuable. These effects can not be produced if the leaves are suppressed; and the plant will be weakened in proportion to the extent to which they are removed."

Every leaf is supplied with mouths (termed stomata) upon their under surface; that these mouths perform an important function is beautifully illustrated by the effects of mildew. Mildew usually attacks the under surface of the leaves; the functions of the stomata are arrested, the fruit, if any, fails to color, and usually shrivels and dies; and if the disease is extensive, the vine will be seriously and permanently injured, if not destroyed. Of this I have recently had a practical as well as costly experiment. Owing to the puffing of vito-gasometers, I was induced, in the spring of '67, to plant about 100 "Extra No. 1, two-year-old," "hardy as an oak," vines, called Delaware and Iona. In August, '67, they were attacked by mildew; and not deeming them worthy of the expenditure necessary for the purchase of sulphur, I left them, exclaiming "*Mars omnibus communis*." They were allowed to "go it" on principle of—

"Man wants but little here below,
Nor wants that little long."

The leaves died, the roots followed for want of leaves; and at the present moment I can find but about one dozen microscopic specimens to illustrate the importance of

quantum suff. of healthy foliage. These "grapes for the million" are *pabulum Acherontes* on my light soil.

As an illustration of the importance of leaves, and the action of the descending sap, I would recommend some of your querists to try a simple experiment—as follows: Select on the same vine, after the completion of the stoning process, two branches of the same summer's growth, of equal size and vigor, and each bearing an equal quantity of fruit. Remove from each, near the old wood, a ring of bark one inch in length; then remove from one branch all its leaves, and mark the result. Such an experiment would beautifully illustrate the importance of leaves, and the action of the descending sap.

After the vine has perfected its fruit and developed the buds preparatory to another year's growth, the leaves continue their functions, and the descending sap contributes to the vine a certain amount of nutritive material. This nutritive material is stored up in the roots, and is used to develop new branches and foliage during the ensuing spring. This storing up of nutritive material can be easily demonstrated by carefully removing a vine from the open ground or pot, washing the roots and planting it in sand from which all soluble matter has been removed by washing, and watering the vine with distilled water. A vine so treated will commence growing at the proper season, and continue such growth until the conserved material is exhausted. Such being the fact, leaves are useful for more purposes than perfecting the fruit and developing buds for the ensuing year.

The leaves of plants are the important operatives in the laboratory of nature, maintaining the atmosphere in a state of purity for the support of animal life. Animals, through the functions of respiration from carbonic acid gas,—and plants, through their leaves, absorb it; by some means they separate the oxygen from the carbon; the oxygen being restored to the

atmosphere to support animal life, the carbon is appropriated by and changed into woody fiber, and "the so-called hydrates of carbon, sugar, starch, tartaric acid, the coloring matter of the leaves, oil, and so forth, originate under the same conditions. If there are many leaves on the vine, large quantities of oxygen are given off to the air, and so corresponding quantities of grape sugar and wood fiber are formed. Hence it follows that the foliage is needed to nourish the fruit and render it sweet."

In plants of rapid growth, the amount of carbon required is much greater than can be supplied by the roots, such plants are therefore supplied with ample foliage, in order that the materials of woody fiber may be obtained from the air. Hence, by the injudicious removal of leaves from the vine, the branches are not supplied with woody fiber, and fail to ripen. This fact is well illustrated by such vines as the Delaware and Iona. In some localities the foliage is destroyed by mildew, the wood is not perfected, and the frost of the ensuing winter destroys them.

In confirmation of the importance of the leaf in the economy of plants, Liebig correctly states that "The power of absorbing nutriment from the atmosphere with which the leaves of plants are endowed, being proportionate to the extent of their surface, every increase in the size and number of these parts is necessarily attended with an increase of nutritive power, and a consequent further development of new leaves and branches. Leaves, twigs, and branches, when completely matured, as they do not become larger, do not need food for their support. For their existence as organs they require only the means necessary for the performance of the special functions to which they are destined by nature."

In the earlier period of the growing season, the stems and leaves act as a continuous drain upon the conserved resources of the plant and the nutritive elements

contained in the soil; but as soon as the leaves attain a certain state of development, their stomata absorb from the atmosphere certain nutritive principles, as well as elaborate important elements. If the extremity of a branch is removed, and its laterals continuously nipped, the efforts of the vine are directed to the early development of the remaining leaves, and to the rapid extension of branches not subjected to the stopping and nipping process. Upon the stopped branches the remaining leaves attain an unusual development, and have their functional power increased. This increased functional activity is well illustrated in an ordinary vinery where vines are subjected to close summer pruning, or in a tomato plant that has been subjected to the pinching process—the leaves becoming larger and thicker.

The development of roots is to a great extent dependent upon the number of healthy leaves, and as we remove the leaves during the growing period, so do we injure or paralyze the functions of the roots. To illustrate the dependence of the roots upon the presence of the foliage, I need but advise the skeptic to try a simple experiment—that of taking two vines of similar age and strength grown in pots; remove from one all its foliage, leave the foliage of the other uninjured, and at the expiration of two or three weeks examine the roots of both.

It is a fact recognized by all who have made the vine a careful study, that the health of a leaf has much to do with the perfect development of the bud at its axil, and that laterals if vigorous and allowed to grow, interfere with the bud's development. The experienced cultivator who wishes to produce large and perfect bunches, carefully stops the laterals upon the canes intended for next year's crop, and as soon as danger is past of the buds breaking, he removes entirely the laterals upon that portion of the cane intended for fruiting. The importance of removing the laterals is well illustrated by the experi-

ence of several writers who have found the best fruit to be produced on laterals, and who recommend stopping the main cane and encouraging the growth of the laterals.

If a cane intended for next year's bearing is allowed to grow to an undue length, the lower leaves usually commence decaying in July or August, to the injury of the buds at their axils, and as a matter of course affect the future crop of fruit. From experience we are convinced that the laterals on that portion of a cane intended for next year's crop should be stopped at the first joints, and as early as safety will justify, entirely removed.

Before the leaves at the base or lower portion of the future fruiting cane have their functions impaired and present an unhealthy appearance, it is advisable to stop the extension of the cane by nipping the end.

Leaves exert an important influence in the nourishment, growth, and ripening of the fruits, and those situated near the fruit a greater influence than those at a distance. As the leaves situated near the base of the stem are liable to have their functions impaired by the extension of the shoot, it is good and sound practice to stop a fruit-bearing shoot at a point one joint beyond the fruit. The leaves left attain a greater size, have their functions increased, and remain green and healthy until autumn. This process of stopping prevents the possibility of the vine being encumbered by an excess of foliage, and forces the vital power of the vine in another direction—that of producing and perfectly developing canes for the next year's crop.

To prevent overcrowding of foliage, and to allow of the necessary extension of the next year's fruiting canes, they should be trained to the top of the trellis, and then right or left, as may be deemed advantageous. By this arrangement air and light will reach the fruit, and the canopy of foliage at the top of the trellis will protect the fruit from the effects of the noonday sun. If the laterals on the main canes

grow too freely, they can be controlled by stopping.

Leaves deprived of light and a sufficient quantity of air can not continue the performance of their functions in a normal manner. This is admirably illustrated in a "let it run vine." If the external masses of leaves and branches are raised, the leaves near the fruit and on the canes for next year's crop will present a jaundiced look—evidence that functional activity is giving place to chemical change. When this condition of things is arrived at, the advocates of "let it run" begin in earnest; they take a huge unwieldy tool called a pruning-knife and slash away right and left; removing the lungs of the vine; expose the fruit to the scorching effects of a midsummer sun; impair functional activity, and seriously injure the roots of the vine.

In our practice, summer pruning the vine consists in pinching or stopping. During the summer months, the vine-pruner should lock up his pruning-knife, and use his thumb-nail for pruning purposes. This doctrine will no doubt be ridiculed by some; but if the vine is subjected to proper winter pruning, the thumb-nail, or at most a small penknife, is all that is required for summer pruning.

As our experience in vine culture is not based upon the experience of to-day nor yesterday, but from observation beginning at an early age, we sometimes fancy that our notions might instruct some of your readers; and if you, Mr. "Horticulturist," are of the opinion that our notions are worth printing, we may at our next attack of vito mania dress our symptoms in the drapery of ink.

AL FRESCO.

ORANGE CULTURE IN FLORIDA.

BY D. H. JACQUES.

THE WILD ORANGE GROVES.

MILLIONS of acres of the best land in Florida are covered with groves of the wild orange. How these groves originated is a mooted question. Some suppose that the tree is indigenous on the peninsula; but as no mention is made of it by the narrators of the early Spanish exploring expeditions, and as it is a matter of history that the orange was introduced by the first colonists nearly three hundred years ago, it seems probable that it is of foreign origin, especially as the fruit is known to deteriorate very rapidly and to return readily to its natural wildness, seedlings of the best varieties generally proving worthless. Be their origin what it may, the present existence of these groves has an important bearing upon the prosperity of the State, as we shall see.

The wild orange of Florida is of two kinds—the sour and the bitter sweet.

Neither of them is palatable. The tree is very beautiful—far more beautiful than the cultivated varieties—and exceedingly productive. A grove loaded with its golden fruit is a sight one may afford to travel hundreds of miles to see.

ORANGE CULTURE AT ST. AUGUSTINE.

The sweet orange has been cultivated in Florida almost from the first settlement of the country by the Spaniards, in the sixteenth century, but has not till lately become a prominent interest. The earliest groves were at St. Augustine—our "Ancient City"—and constituted for a long time almost the only source of income possessed by the inhabitants. In February, 1835, the "great frost," as it is called, killed every tree to the roots; and not only every orange-tree but every fruit-tree of all kinds in East Florida north of the twenty-ninth parallel of latitude.

Groves subsequently planted at St. Augustine and elsewhere were attacked by the scale insect (*Coccus Hesperidum*), and most of them rendered worthless.

REVIVAL OF ORANGE CULTURE.

Within the last ten years there has been a revival of the interest in orange culture. The scale insect seemed to have ceased its ravages. The groves planted since 1858 have, where any tolerable degree of attention in the way of cultivation has been given them, flourished finely. In fact, some of them are now bearing heavily under almost total neglect.

It is not true, as some have asserted, that the scale insect has disappeared. It is still present in many if not in all groves, but it seems no longer to be capable of its former destructiveness. At any rate, trees planted in suitable soil and properly cultivated do not now suffer in any appreciable degree from its presence, and some of the old groves formerly ravaged by it and rendered unproductive, are now again in bearing.

SOME BEARING GROVES.

Groves of any considerable extent, old enough to be in full bearing, are far from numerous. Three or four on the Gulf coast, and as many in East Florida, are all that I have any account of. That of Mr. Dunmet, about thirty miles south of New Smyrna, is said to be the most flourishing and valuable one in the State. The largest one on the Gulf coast is at Fort Myers, and consists of between four and five hundred orange, lemon, and lime trees. It might be made very valuable, but is now in a neglected condition. At Sarasota Bay, a Dr. Snell has a grove consisting of three hundred orange and upward of a hundred fine lemon trees. A gentleman who visited it last winter says that the lemon trees were bent to the ground with their immense loads of fruit, and that the orange trees, though not so productive, had a good crop. *These trees have had no care for the last five years*, and my informant

pronounces the grove "a standing monument of the occupant's laziness and stupidity." Dr. Snell does not reside on the place.

NEWLY PLANTED GROVES.

The young groves, planted since the war, are numerous, and some of them extensive. They are generally receiving some cultivation, and where they were properly planted, are flourishing finely. In many cases, however, the planters have manifested the most utter ignorance of the first principles of horticulture, and if they succeed in producing good crops, the result will not be due to any skill in the cultivators, but to the astonishing vitality and recuperative energy of the noble tree they are so shamefully abusing.

PROPAGATION AND CULTURE.

The cultivation of the orange is as simple and easy a thing as the cultivation of the peach, and both thrive in Florida with very slight attention, but would richly repay more care than they are now receiving.

The orange will succeed on any soil in Florida, but on the poorest some manure is required. Good high hammock land, however, is best for it. Such land requires no preparation, previous to planting, except clearing and digging the holes. The plowing may be done afterward, and any low-growing crop planted between the rows.

Several methods of establishing orange groves or orchards have been practiced. Some have procured young trees of the variety desired from a nursery. This is a very satisfactory way where but few trees are wanted, and the planter can afford to pay a very high price for them; but orange nurseries are scarce, and the trees far too high priced for extensive planting. Others have commenced by sowing the seeds of the wild fruit and budding the stocks thus procured with the sweet orange, becoming in this way their own nurserymen. This is a judicious course, as the nursing and budding of the wild stocks are very simple

and easy operations; I am told that in some cases the seeds of the sweet orange have been sowed, and the trees thus procured transplanted without budding. Such trees will no doubt one of these days astonish as well as disappoint their owners by producing a crop of worthless fruit. The course now most commonly pursued in establishing an orange grove is to procure from some neighboring hammock, where they abound, a sufficient number of wild orange-trees of suitable size and transplant them into the ground prepared for the new orchard. These wild stocks may be from two to three inches in diameter. They should be carefully dug up (preserving as many roots uninjured as possible), cut off to within two or three feet of the collar, and then planted in large but shallow holes previously prepared. Twenty feet apart each way, giving 108 trees to the acre, is about the right distance, though some are planting much closer. The wild stocks thus planted will soon put out shoots in abundance, all but two or three of which should be kept carefully rubbed off. Those left may be budded as soon as of sufficient size (which will be within three months) with the variety chosen for cultivation. Some of these budded trees will bear in eighteen months from the time of budding, and all, if properly cared for in the mean time, will be in bearing the third year. The transplanting of the wild stocks may be performed at any time, but the winter is generally chosen for the operation. Some, however, prefer August to any other month, and a gentleman who has had considerable experience informs me that he has transplanted orange-trees in that month when loaded with fruit, and that they have matured their crop in their new location and produced another the next year, as if nothing had happened to them.

But the plan by means of which a bearing grove of the sweet orange can be secured in the shortest possible time, is to purchase land with a good wild grove

upon it, and selecting suitable trees at the right distance apart, dig up and remove all the others and graft those left where they stand. These trees will commence bearing the next year, and will soon be capable of producing a heavy crop of fruit.

VARIETIES.

The variety most extensively planted in Florida, I think, is the China, believed to have been introduced into Europe and thence into Florida from the country from which it takes its name. It has a thin smooth rind, and is very juicy. The St. Michael is a sub-variety of the China.

The Portugal or Lisbon orange is nearly round, and has a thick rind.

The Maltese or Blood orange is remarkable for the red color of its pulp. I have seen but few of this variety in Florida.

The Tangerine is a small flat fruit about half the size of the common orange, with a pleasant odor and a very fine flavor.

The Mandarin orange, recently introduced from China, has a fruit much broader than long, a thick rind loosely attached to the flesh, and much smaller leaves than the other sorts. It is classed by some as a distinct species (*Citrus nobilis*). It is one of the best kinds.

FACTS AND FIGURES.

The cost of planting an orange orchard must vary greatly in different localities, depending partly upon the original condition of the land and partly upon the expense of getting the trees from the wild grove. Formerly the wild trees were considered as free to everybody, and people wishing a few to plant dug wherever they pleased; but now they are beginning to have a market value. It is not in all cases convenient or possible for a person to buy land with wild groves on it. A certain sum, then, must be allowed for stocks.

One gentleman with whom I am acquainted, and who has already planted several acres, estimates the cost in his case as only \$25 per acre. He does not, how-

ever, include the cost of clearing the land. I estimate as follows for ten acres of fresh hammock land with its natural forest growth upon it:

Cost of ten acres at \$10 per acre	\$100
Clearing and preparing	250
Inclosing with rail fence	300
1,000 trees at 25 cents each	250
Planting and budding	100
Incidental	100
	\$1,000

The use of the ground for other crops will fully pay for all the cultivation the grove will require for the first three years, after which there will be an income from the grove itself.

With regard to the productiveness of the orange-tree, it is impossible at present to arrive at any very satisfactory conclusion. This is partly because there has been no systematic mode of culture pursued, and the real production has varied greatly in different groves; but mainly because people in Florida never weigh, measure, or count anything, and really have no idea how many oranges one of their trees produces. Some of the old trees at St. Augustine are said to have produced annually at least 8,000 oranges each. Mr. C. F. Reed, of Mandarin, on the St. John's River, gathered

12,000 from three trees last year, one tree bearing 8,200, another 3,800, and the third 5,500. I have been told that thrifty trees sometimes bear as many as 1,000 oranges the third year from the bud, but such productiveness I think must be rare. The conclusion I have arrived at, from personal observation, is that a well-planted and properly cultivated grove at ten years of age will average 2,000 oranges per tree. Taking one half of this, however, as a basis of calculation, ten acres will produce 1,000,000, which, at \$25 per thousand, the lowest price of the last season in Jacksonville, amounts to \$25,000. The crop of the present season has in some cases been bargained for in advance for \$25 per thousand at the grove.

Florida oranges are the best in the world, and will always command the highest price in all markets. Some of the best were sold in Jacksonville during the last winter as high as \$50 per thousand.

It should be observed here, that north of the twenty-eighth parallel of latitude, crops are occasionally cut off by frost; but a total failure from this or any other cause is rare.

GLEN EVERGREEN, NEAR JACKSONVILLE, FLA.

LARGE STOCK OF SMALL FRUITS.—Our West Jersey friends have had it all their own way with the small fruits for several years past, but they must look well to their laurels, or other sections of the country will take the lead. Parry, Collins, Andrews, and several others, have talked about their hundred acres of small fruits, and many of us began to look upon them as the aristocrats of the profession; but lately a few of our Northern fruit-growers have let us know that they are also getting up among their hundreds.

Purdy & Johnson, of Palmyra, N. Y., and Purdy & Hance, of South Bend, Ind., announce that they have 150 acres of small fruits. Well, this looks like business, and

as though the time would soon come when everybody could get at least one dish of berries during the season.

We understand that Purdy & Co. have planted largely of the Black Raspberry, and we would advise others to do the same, as it is a safe investment, and all the varieties are hardy and bear abundantly. Besides this, they can be always shipped to market without loss by being crushed, and they seldom become moldy, even in damp, hot weather, as is often the case with the red varieties. If there should ever come a time when the market is overstocked, then the fruit may be readily dried, and it always commands a good price in that state. — *Whitlock's Recorder.*

GRAPE LEAVES.

AN examining trip among acres of vineyards in association with scores of grape-growers, and the frequent question of "What is this variety?" put by many a vine-grower, caused us to think somewhat of the requisites of distinctive markings and detection or knowledge of varieties by means of their foliage. With the older and generally cultivated sorts, as

Isabella and Clinton, the leaf has become so well known that few have to see the fruit before deciding on the variety; but with those of more recent introduction, although many of them are largely grown and widely distributed, yet knowledge of them seems known only to comparatively few, except by means of the fruit.

Referring to the books, we find in de-

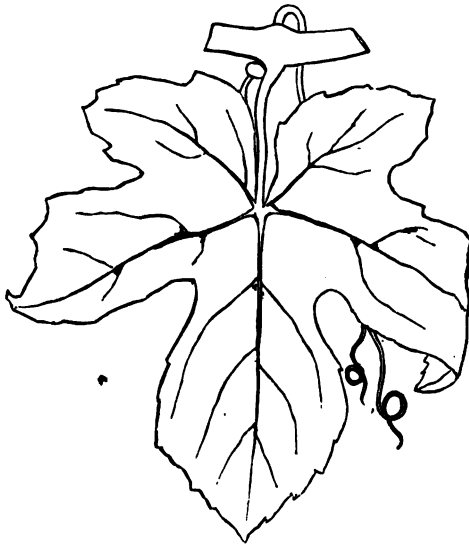


FIG. 90.—Leaf of the *Adirondac*.

scription of varieties that while the size of bunch, form and color of berry, etc., are depicted, it is rare to find the foliage even mentioned, and the vine itself more than remarked upon as hardy or tender. As foliage is a very important item in the making up of a good grapevine to meet the great extremes of our climate, and as a knowledge of it in connection with varieties would often serve to assist in deciding upon the identity of a sort, even

without the fruit, we suggest that more care and attention be paid thereto by describers of new sorts, as well as the makers of books.

To assist in the work, we have carefully gone over a number of varieties, made some outlines of leaves, and description of the color of leaf and leaf-stalk as they appear to us. We may not be strictly correct, but as we propose this as initiatory for further knowledge by others, we

are perhaps near enough the truth. We shall be pleased to receive from any and all grape-growers and horticulturists ideas and corrections, and trust we may end in being enabled to see a written description of any variety so that it can as readily be detected in foliage as in the fruit.

Our drawings have been made from mature leaves, and exhibit the general

form of the variety. Commencing with Adirondac, we find the first growth or young terminal leaves a pale yellow green, and changing very soon to a dark sea green, and greenish white woolly beneath. Leaf-stalks dull reddish, a little moldy.

Next, the Catawba has leaves at first of a light pale green, changing at maturity to a rich yellowish grass green, and

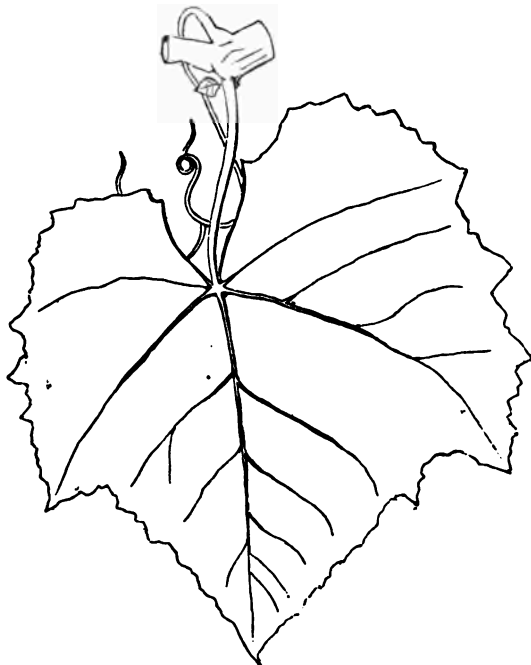


FIG. 91.—*Leaf of the Catawba.*

underneath yellowish woolly. The leaf-stalk greenish, a little with red next the leaf or when fully exposed to the sun.

The Concord has leaves at first of a bright grass green, becoming a very dark sea green at maturity, and yellowish woolly white underneath. Leaf-stalk dull green.

The Delaware at first is of a light yellow pea green, and at maturity a dark yellowish green, yellow green beneath. Leaf-

stalk green, becoming bronzed at maturity.

Diana Hamburg has foliage at first light yellow green, changing to a dark grass green at maturity, light pea green beneath. Leaf-stalk green, tinged on the upper side with a brownish red.

Elsinborough has foliage of a dark rich pea green, with green leaf-stalks, until they are very mature, when they become bronzed.

The Hine has leaves of a light yellow green at first, changing to a rich dark grass, almost sea green, at maturity, the underside *slightly* shaded with the white woolly character of its—*labrusca*—class. The leaf-stalks are green, becoming bronzed at maturity.

Hartford Prolific has leaves a light sea green at first, and changing a sea green

when mature; greenish white underneath. Leaf-stalk a bright red.

The leaf of Iona at first is a light pale yellow green, becoming a light sea green at maturity, woolly white beneath. Leaf-stalk pale red or pink.

Israella has a leaf of a light yellow green at first, but soon changing to a dark rich sea green; the underside greenish,

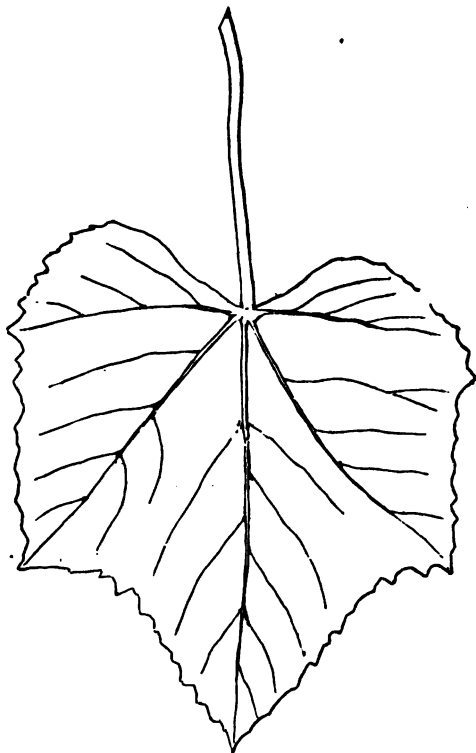


FIG. 92.—*Leaf of the Concord.*

slightly downy or woolly, of a yellowish white shade. Leaf-stalk dull reddish green, with a slight mold or bloom.

The foliage of Ives' Seedling is at first light green, but soon changes to a deep rich dark green, while the ribs continue prominent of a light green color. The underside is woolly and yellowish. The

leaf-stalk is moldy, of a reddish brown midway, but green at each end.

Laura Beverly, a new Canadian candidate for favor, has foliage of a light yellow grass green at first, becoming, when mature, a dark rich sea green, light green beneath, with a slight yellow muddy tinge. Leaf-stalks reddish.

Maxatawney is at first light yellow green, becoming very dark rich sea green; dull greenish yellow white underneath. Leaf-stalk red.

Miles has foliage light pea green at first, becoming dark yellowish green, quite white underneath. Leaf-stalks at first downy green, becoming bronzed or a dark dull red.

Mottled is at first a clear dark pea

green, becoming at maturity quite dark, and very old leaves changing to a yellowish tint; underside white woolly. Leaf-stalks bronzed.

The Sherman has foliage a light yellow dark green, and green underneath. The leaf-stalks dull reddish and a little hairy.

Telegraph is at first a pea green, becoming a dark sea green, with rough whitish

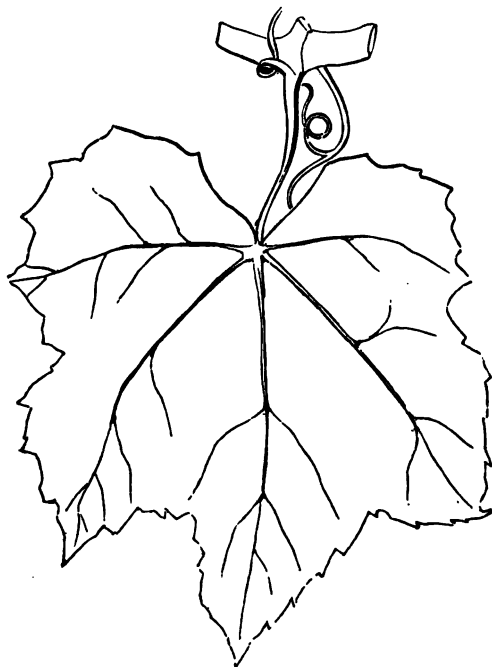


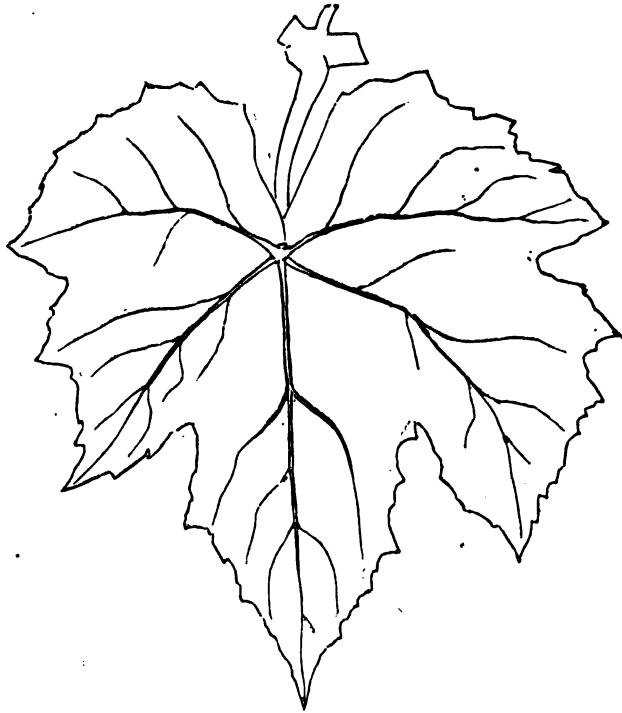
FIG. 98.—*Leaf of the Iona.*

mold or woolly beneath. Leaf-stalk green.

To Kalon is a yellow green, and retains its yellow tinge at maturity; underneath slightly woolly. Leaf-stalk green.

The Weekawken leaves are at first a light yellow green, and pea green at maturity, smooth beneath. Leaf-stalk reddish brown.

We have many more notes and drawings of foliage; but, as we have said, our object is to draw attention toward some method of more surely detecting varieties by means of foliage, and the present is sufficient, we hope, for the purpose. If the grape-growing societies would take up this matter and appoint committees toward its completion, and have these committees

FIG. 94.—*Leaf of Ives' Seedling.*

confer with one another, and then submit the joint conclusion to the American Pomological Society for a final report and record, we should count them as doing a work of great value to the grape interests and horticulture at large.

BURYING PLANTS DURING WINTER.—A writer in the London *Florist and Pomologist* gives an account of his experience in wintering geraniums by burying them in a trench under ground, below the reach of frost. The result was quite successful, only two plants out of fifty having decayed when dug out the last of April. The trench should be made in a location where no water can remain at a depth of two feet below the level—that being the depth at which the trench ought to be dug—the plants laid in by the heel in a row, then covered with straight straw, set so as to carry off water, and then covered with earth, according to the climate, to a depth sufficient to keep out frost; finishing off in a ridge or roof shape to carry off water. Covering the plants over the straw first with boards set in a ridge form and then heaping on earth, we think, would render pressure less liable, and tend to keep a more open circulation in the trench, and thus lessen the liability to damp or decay; but with a little care in this way, we see no reason why any half hardy plant may not easily be kept over winter in this manner.

NOTES OF SOME OF THE EARLY HISTORY OF FRUIT CULTURE IN THIS COUNTRY, WITH RECORDS OF THE PROMINENT EARLY ACTORS AND ABETTORS.

ONE of our leading horticulturists has long been and is now gathering material for a record of the history of fruit culture in this country, together with short accounts of the most prominent men whose liberal minds and energetic actions have assisted in originating, introducing, improving, and disseminating the choicest fruits of the earth so widely and so cheaply that there is no man, owner of a half-acre lot, so poor but he can and does grow some of them.

We have been permitted, at this time, to make a few extracts from the compiler's collection, and hope to get liberty to continue them, as we believe all that relates to our pomological history will be received with pleasure by our readers.

"The earliest nursery of trees for sale in this country (according to William R. Prince, of Flushing, N. Y.) was established in 1732, by his great-grandfather, William Prince, and it was by him that the Newtown Pippin apple was extensively propagated and disseminated. His footsteps were ably filled by his son, William Prince, whose fair and honest dealings were proverbial and yet in the memory of many people, as the trees of his growing are yet in their orchards, yielding fruit correct to name. * * *

"The first nursery established in Massachusetts was at Newton, by — Kenrick. The first in New Jersey was by William Coxe, and the first in Maryland by William Sinclair. * * *

"One of the most liberal of the early pioneers of horticulture in Maine was Benjamin Vaughn, who in early life was a member of the British Parliament, but for republican sentiments expressed, was censured, and at the close of the Revolutionary war he settled at Hallowell, where he

imported, propagated, and distributed freely trees, plants, and seeds, contributing largely toward diffusing a taste for fruit culture. Ephraim Goodale settled at what is now the town of Orrington, Maine, in about 1808, and at once planted an orchard and a nursery, sparing no trouble or expense toward obtaining the best fruits then known, and freely distributing his knowledge in aid of others.

"The old cherry-trees just out of New Haven, Conn., so well known by many horticulturists—the Black Heart, Honey Heart, May Duke, etc.—were, some of them, planted in 1775 by Benjamin Douglass, a lawyer of New Haven. Fruit by the bushels was gathered in after years from the May Duke as early in the season as the 10th of June.

"Jonah Hotchkiss in 1780 introduced grafts of the Delancey pear from Red Hook, Long Island; and as he brought no name with the grafts, it took the one of Jonah, by which many persons yet recognize it.

"Nathan Beers was a nurseryman previous to 1779, and cultivated many choice varieties of fruits yet counted as among the best—St. Michael or White Doyenne, Catherine, etc.

"Nathan Beers, 2d, followed the occupation of his father, dying in 1849, at the ripe age of seventy-nine years.

"Timothy Dwight, President of Yale College, was the first to cultivate strawberries and assist in bringing them into gardens as a valuable fruit.

"James Hillhouse, a lawyer by profession, cultivated fruit largely, and at one time received a large collection of apple and pear grafts from the king's garden, in France. To him especially New Haven owes the noble elms that adorn many of its streets, for he assisted in planting them.

"Henry W. Edwards, at one time Governor of the State, planted pear seeds in 1817, from which sprang many new sorts that are now of high repute, as Henrietta, Dallas, Elizabeth, etc.

"Noyes Darling was a man of enthusiasm in fruit culture, and gave great attention to insects and diseases of fruits. His researches have been in part published."

Skipping over a number of records, we find—

"David Thomas as early as about 1810 was propagating and disseminating trees

and plants in western or central New York, and that about 1820 or '21 he had quite an extensive nursery."

The extent and value of his teachings are yet well known and remembered with warm and kind appreciation in all of western New York, and even into other States, where he is at this day quoted as authority in principles of cultivation as well as in correctness of names.

As we said, we hope to be able hereafter to continue these notes ere they appear in full, as now proposed.

PEARS—FELIX DE LEIM AND CADETTE DE VAUX.

THE outlines and descriptions of these pears we now give more to draw attention of pear-growers to them, than to advise their planting. It has been said they

might possibly prove identical with varieties known under other names, but if so, we have yet to learn. They are both for-eigners.

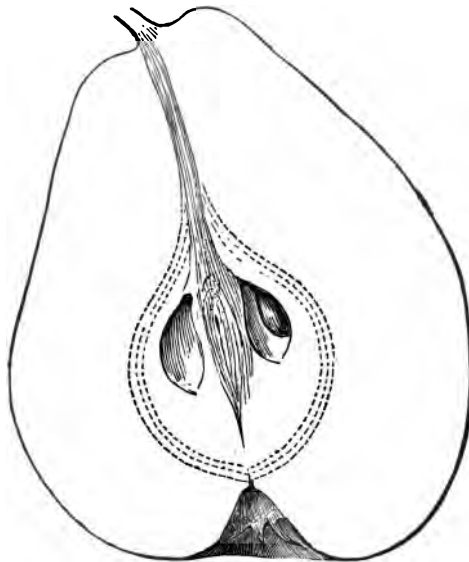


FIG. 95.—*Felix de Leim*.

Fruit, medium size; oblong pyriform; calyx end, surface having a rough feel; pale greenish yellow with faint marblings and shades of russet, and scattered dots at stem, slender, planted on one side with a slight depression; calyx, with narrow long

segments, completely reflexed; basin, tery, juicy, melting, vinous, sweet. Season, late autumn.

The fruit of Cadette de Vaux is large or above medium, of irregular obovate ob-

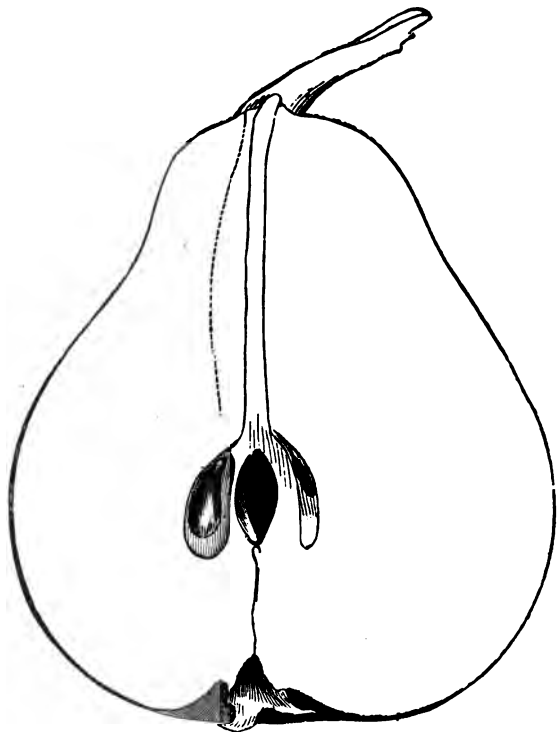


FIG. 96.—*Cadette de Vaux.*

tuse pyriform shape, greenish yellow, with suffused green dots; stem, rather stout and fleshy at base; calyx, large and open, with long, completely reflexed, segments; basin, shallow; core, small,—center, hol-

low, and the capsules partially hollow; seeds, light brown, long pyramidal and pointed at both ends; flesh, breaking, almost melting,—sweet, juicy, aromatic. Season, winter.

POTATOES.—An extensive potato-grower tells us he has found the Early Rose to mature early and perhaps fully maintain its character, but that, side by side, his crop of Massachusetts or Jackson Whites was more productive. A variety that he

has under name of Shaw—a smooth, even tuber—he, however, considers best for table, while a new sort, called Lottridge, gives promise of having the qualities of earliness, goodness, and productiveness in greater degree than any other variety.

MODEL FRUIT CROPS.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

THE attentive reader of our numerous agricultural journals can not have failed to notice that about the close of every fruit season a multitude of powerful stories find their way into the aforesaid journals, touching incredible crops which certain parties have gathered from one, two, or three acres. But the agricultural papers have no monopoly of these interesting details. The writers for the political dailies and weeklies are also found to temper their vitriolic partisanship with an infusion of horticultural information. I notice that these gentlemen almost invariably close their inflammatory accounts of a tremendous crop with exhortations to the reader to go and do likewise. A taking paragraph once set afloat by the press, travels on the wings of the wind, and is quickly spread before a million of readers. Like all other attractive stories, its marvels multiply by repetition, sometimes by accident, sometimes by design. A careless proof-reader drops a figure here, or a knavish one will add another there, either of them doubling the original result. Thus exaggerated, it acquires a new popularity for all lovers of the sensational, and yet it will generally wind up a long career of travel without question or contradiction. The uninitiated believe implicitly, and become impatient to imitate; but the experienced reader will only deprecate the original error, and lament the consequences.

By this extensive publication of those extraordinary successes which certainly do occasionally occur with fruit-growers, the bright side only of the question is presented for public consideration. No one makes proclamation either of his own failures or of those of his neighbors. On the contrary, most of us are impatient to

become bearers of good news. It is an infinitely more grateful office than the bearing of evil tidings. Hence the competition to report in print the earliest information of any exceptionally large crop, and the newspaper silence touching the equally exceptional small ones. The successes work encouragement to the down-hearted, but the failures depress them still further. Either way, our sympathies are contagious.

I do not mean to reproduce the ample catalogue of overgrown stories of the present season, though many such have fallen under my notice. But two or three are worth reciting as illustrations. A leading monthly informs us that Mr. G. H. Baker, of Illinois, produced 253 bushels of the Albany Seedling Strawberry from one acre, "by simply running a narrow one-horse plow in furrows three feet apart, cutting off the weeds with a scythe, and giving him a clear profit of \$1,509 for the one acre." Then an Eastern paper assures us that "Mr. Augustus Parker, of Grove Hall Avenue, Boston, picked 4,800 boxes of the same strawberry from an acre and a half of ground within ten days, and estimated that the unusual heat of three days dried up a thousand boxes on the vines. He sold the 4,800 boxes on his premises for thirty-five cents a quart—or \$1,680 for the acre and a half. There may have been more animating instances of success placed on record the present season, but none such have come under my notice. Nor do I mean to doubt the truthfulness of the foregoing. But these results are far in advance of any in New Jersey, so far as my knowledge extends, as the greatest profit realized from an acre of strawberries, so far as I know, did not exceed \$512, though I have known great fields of them to clear

\$312 per acre. The past season has been one of unaccountable disaster to some of us. On one farm, very profitable crops of strawberries have been secured, while on that adjoining, the failure has been almost total. Such alternations, however, are inseparable from fruit culture; and as with grass and grain, it is the average income of a turn of years which should determine the measure of annual profit.

But I took up my pen to put on record a crop almost as remarkable as either of the foregoing. In the suburbs of this city there is a well-grown peach orchard, containing 2,600 hills of the Dorchester Blackberry. These are set about fourteen feet apart, and in the same row with the trees, the rows being also fourteen feet asunder. They were planted in the spring of 1864. If they had been set in a field by themselves, as blackberries are usually planted, they would occupy exactly two and a half acres. When set out, two plants were put in each hill. From these 2,600 hills, the owner, Mr. John Mitchell, this season gathered and sold fruit to the amount of \$2,365 90. It was all disposed of by one agent in New York, from whom net returns were received amounting to \$2,057 64. The number of quarts was 5,121; average price 46 cents; cost of picking at 2½ cents, \$128 02, leaving \$1,959 62 clear. I have heard of even larger gains having been made per acre from the cultivated blackberry, but they were not sufficiently well authenticated to be relied on. The figures just stated I know to be correct. They can be verified to the satisfaction of all who doubt them. The previous history of this field is as follows:

1865. Product paid for tillage.	
1866. Product, with low prices.....	\$600 00
1867. do.	1,300 00
1868. do. all clear.....	1,959 62
	<hr/>
	\$3,859 62

From this total must be deducted the cost of picking the crops of 1866 and 1867. It would be given now, but there are no means of ascertaining it. It probably did

not exceed \$159 62, leaving \$3,700 as the clear net product of four crops, or \$740 per annum for the five years during which the ground was in use. But during the first two years the portion between the rows was cropped with pickles and tomatoes, and the peach-trees were coming into bearing. In addition to these gains, great quantities of suckers have been dug and sold. So many were taken up last fall and this spring, that Mr. Mitchell is of opinion he would have had one fourth more berries had he done no digging.

Now then for details and explanations, such as are essential to a full understanding of the merits of the case. The land on which these crops were grown was cleared of pine timber the winter before planting the blackberries. It was not cleared up very carefully, and the plowing was done through the stumps. A shovelful of barnyard manure was put in each hill when the plants were set. There has been no manure applied since, except to the tomato and pickle crops between the rows. The blackberries have thus had no other fertilizer than the decaying stumps and rubbish of the new land. The soil is an exceedingly light sandy loam, and as it has no farm buildings, would not sell for more than \$125 per acre. It is unfit for a grain crop, but is pronounced by Eastern men, who do not understand its peculiarities, as of no value whatever. But, though in appearance so unpromising to them, it is the very description of soil which we prize most highly. It will produce all the berries in perfection. No soil can exceed it for melons, sweet potatoes, tomatoes, and asparagus, all staple crops with us. What it does for blackberries is seen by the dollar marks above.

Taken altogether, this two-and-a-half-acre field may be regarded as a very profitable investment. But the extraordinary blackberry crop of this year must be regarded as an exceptional one, not to be depended on as certain to be realized annually. In stating the profit, I desire to

explain why it has been so much larger this year than at any time before, as well as why it can not be expected often in the future. The naked statement would be likely to hold out unfair inducements for others to rush into the same business, while a full recital of the causes of success will materially modify such impetuosity. Moreover, the yield per acre was so far in advance of what the most successful growers of blackberries have been able to realize in this neighborhood, that I was myself anxious to understand why it had been secured this season for the first time.

The reader knows that the past winter was one of unexampled severity, and that under the long continued cold the fruit buds of all kinds perished. No such winter has been experienced here since the settlement of New Jersey. All our large fields of Lawton Blackberries were killed to the ground, except such as happened to be growing either in peach or apple orchards. The like destruction from cold had never been known. We had no other blackberry in extensive cultivation, as the Wilson Early has not yet been so multiplied as to affect the market for fruit, much less to fill the gap occasioned by the extirpation of an old standard like the

Lawton. The Kittatinny is not largely grown here, though it came out of the winter uninjured. Of the Dorchester there are even fewer plants, and no extensive field of them, the largest being that of Mr. Mitchell. Hence the supply of blackberries was cut off, and the few whose plants were growing under some kind of protection were the only parties who had fruit for market. Two of my neighbors, whose Lawtons were protected by trees, had good and paying crops, and such plants as were sheltered by garden fences bore as abundantly as ever. The market being thus almost bare of fruit, those who were fortunate enough to have full bushes secured a golden harvest. Prices averaged higher, for the season, than we have ever known. Mr. Mitchell was one of these fortunate men. His Dorchesters were effectually protected by the overhanging trees, and he marketed the best crop he ever gathered. Whether his plants would have escaped without protection I am not prepared to say; but my impression is they would have been uninjured by the cold, as others, having the same plant growing without protection, gathered good crops.

BURLINGTON, N. J.

DISTANCE APART FOR ORCHARD TREES.

WE are gradually progressing and yearly learning to better and better understand our climates and soils, our trees and vines; and as we progress and come to know our own, we throw away much of the early-day teachings that were brought to us from across the broad ocean. Our vine-growers commencing with their vines at three to four feet, have gradually expanded them, until now the majority of planters give to them eight by ten or ten by twelve, and some even more, according to the soil and the habit of the sort. So,

also, beginning with severe winter and summer pruning, from which they obtained a little fruit, sun-burnt and half ripened, and produced various diseases in the system of the vine, they have come to a knowledge of the vine's nature, and by almost leaving it alone are rewarded with luscious fruit and healthy foliage. In the apple and pear orchard we have been brought to place the first from thirty-five to forty feet apart, and the latter twenty-five to thirty, thus subjecting them to all the terrible burning heat of the sun's rays, in a long, hot

summer's drought, and to stand as it were alone, and brave singly the storms of wind that winter and spring bend their tops, and crack and tear loose by leverage their roots.

We have long been impressed with the view that these old advices of distance were erroneous, and our readers will bear us witness that we have before now advised a closer planting; and as a break, also, and aid toward shielding our fruit-trees, the intermingling more or less in the orchard of evergreens.

Our own practice has been most successful in apple orchards at twelve by sixteen feet, and we have known the best results from a like distance by some extensive orchardists in the West. The past two years we have doubted if even this distance had not better be reduced, and in exposed, bleak, wintry situations, on prairies or bluffs, we are satisfied it had. The closer trees are planted to each other, the more do they assist each other in breaking the

force of the wind, and in gradually ameliorating the climate. They will sooner shield and shade the ground and their roots; retaining thereby a greater relative proportion of moisture and food, they will come sooner into maturing and fruiting their blossoms; and as they increase in size will acquire the rough bark that comes with maturity and belongs to them in health, so that as they become too thick for the light to keep them round and full in the contour and extension of branch, they will be the better enabled to stand alone, while the fruit that has been gathered from the trees requiring removal will be found to have more than repaid the first cost of the whole orchard.

Were we to plant an apple orchard to-day, we think we should set our trees ten by fifteen feet, and if of standard pears ten by ten feet, if of dwarf pears or apples six by eight feet, and we would use occasionally an evergreen tree of some hardy variety in the place of a fruit-tree.

MOISTURE AND TEMPERATURE IN PLANT CULTURE.

A HEALTHY and vigorous growth of plants in green-houses is dependent so much upon a proper degree of temperature and atmospheric humidity, that he who would be a successful cultivator must be a close observer, and devote much time and attention to the subject to secure the proper conditions for success.

Plants may have a congenial soil, a proper amount of root moisture, and yet suffer from aridity, humidity, or a lack of proper temperature of the atmosphere in which they grow. The thermometer gives the actual temperature of the air; but all observing persons will acknowledge that we require some means of ascertaining the amount of moisture or the sensible temperature due to evaporation. We en-

ter a proper regulated green-house, with a temperature of 65°, and feel a greater degree of warmth than in our furnace-heated dwelling at 70°, for the reason that in the latter we have abundant moisture, while in the former not enough for comfort or health.

Scientific men have made hygrometry a careful study, and it is due to their efforts that we have the hygrometer. This instrument, as ordinarily constructed, requires a somewhat intricate calculation to arrive at the amount of moisture contained in the air at different temperatures; and elaborate tables were constructed, which obviated the difficulty to some extent.

A Mr. Edson has lately invented an instrument which he calls a hydrolite, which

is manufactured by N. M. Lowe, of 103 Court Street, Boston, which is so simple in its operation and indications as to be within the comprehension of almost every person.



FIG. 97.

Our figure shows the general form of the instrument, which is not self-acting.

The pointers may be moved by means of the knob in front, as per following directions:

To find the actual temperature, read the right-hand or dry bulb thermometer.

To find the sensible temperature, or temperature due to evaporation, read the left-hand or wet bulb thermometer.

To find the relative humidity, take hold of the small knob in front of the instrument, and raise or lower it as the case may be until the upper edge of the right-hand adjusting pointer coincides with the surface of the mercury in the right-hand thermometer; then, by turning the knob to the right or left, bring the upper edge of the left-hand adjusting pointer to the surface of the mercury in the left-hand thermometer. The instrument is now adjusted; and the relative humidity, dew-point, and absolute amount will be indicated by the dial and index hand. Thus observing upon which of the nearly vertical lines the end of the index hand rests, let the eyes follow this line to the top of the dial, and there will be found numbers

which give the per cent. of humidity sought.

Observe upon the dial the diagonal line upon which the end of the index hand rests. Let the eye follow it down to the right of the dial, and there numbers indicate the dew-point sought.

Upon this line also are two sets of numbers, one of which gives, in grains and tenths, the weight of water (in form of vapor) in each cubic foot of air. The others give in inches of water the force of vapor.

The use of the hygrometer will show why stoves, now so generally in use, are injurious to health from the excessive dryness of the air which they produce in a room, causing moisture to evaporate too freely from the skin, with all the painful consequences to the general health of those who come under their influence. The use of stoves for heating green-houses has been long discarded, from the aridity of the atmosphere produced, as well as from the escape of noxious gases, the product of combustion of the fuel used. A difference of from six to eight degrees between the reading of the two thermometers, or about 60° of humidity, according to Edson's instrument, will be found to produce or to accompany a pleasant degree of moisture in a room. In the culture of plants in glass houses, some species will require more humidity than this.

We presume that most superior gardeners are well acquainted with the nature of the proper climates of their plants. At any rate such knowledge is necessary for their proper treatment, not only as to temperature, but also as to moisture. If this knowledge is not possessed by the gardener, his employer should be familiar with it; and then, provided with such instruments as the hydrodeik and a self-registering thermometer, he will be enabled to ascertain if the plants have been properly cared for in his absence. How often do our green-house plants become shriveled or weak before we have the least suspicion

that there is any alteration in the moisture of the air! Then, as soon as we become aware of the fact, we drench them with water without taking their actual requirements into consideration. On the other hand, if we fancy from our own sensations that the air of our green-house is dry, we sprinkle water about without measure. Mr. Glashier, an English author on meteorology, observes, "that our sensations with regard to heat and humidity are very fallacious guides. Every one must have felt in summer the heat to be at times almost unsupportable, without any apparent reason, as shown by the reading of the thermometer. This happens when the air is nearly calm and *moist*; the air is already so moist that it can not take off our own moisture as we give it off in perspiration, and so we say it is sultry; but only let the air get in motion, if only by means of the Indian punkah or huge fan swinging about, and then we feel cool and experience relief. Yet the same hygrometric condition exists. It is only a very small amount of vapor and heat that we force the air to take from us by the process. But should the air get *drier* with the same temperature, then evaporation from the skin takes place with great activity, and we feel a marked sensation of cold, and this result is as great a fallacy as the former. The fact is, that with the same temperature, and enjoying an equal state of health, we experience, according to our mere sensations, various changes of temperature, and so our senses can not guide us with regard to heat and humidity as far as our own health is concerned, and much less with respect to that of our plants. Therefore the hygrometer, properly used, and its indications attended to, may be made the means of preserving many valuable plants which might other-

wise perish in an ill-regulated atmosphere. In our gardens our tender plants are sometimes endangered by changes in the hygrometric condition of the air. Abundant dews at this season are often connected with white-frost, which may prove disastrous to the plants. Now, if we consult the hygrometer in the evening, and find the two bulbs pretty much alike in their reading, while the sky is clear, even should there be no rain, there will certainly be a copious deposit of dew. After sunset, all bodies on the surface of the earth, after having been heated by the sun during the day, radiate or give off their heat into space, get cold, and soon reach the dew-point, when they become covered with moisture, provided there are no clouds or other objects to check the dispersion of heat or reflect it back to the earth. If the temperature be low, the dew becomes hoar-frost. All gardeners know that it may be produced without the thermometer falling to the freezing-point. The reason is, that dew evaporates so rapidly that it deprives itself of a considerable amount of heat, so as to congeal into minute needles the water remaining on the plant or other bodies.

"But the frosts of spring and autumn, which are so injurious, proceed generally, not from the congelation of moisture deposited from the atmosphere, but from the congelation of their own proper moisture, which forms part of their composition by the radiation of their temperature, caused by the nocturnal radiation which, in other cases, produces dew or hoar-frost. Now all this may be known beforehand by carefully noting the hygrometer, and then we can prevent or diminish the deposit of dew by covering our plants with a screen of some kind."

THE BEST MANURE to mingle with the clay loam and sand in preparing soil for potting of roses, fuchsias, geraniums, etc.,

is clear, well-rotted cow dung. If well and thoroughly decayed, one part to every three may be safely used.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

WE have recently received a letter from J. C. G., of Granville County, N. C., wherein the writer inquires whether the accuracy of the statement made by our correspondent "E," touching the weights of certain Brahma fowls to which he alluded in our August number, may be fully confided in. In answer, we beg leave to reply in the affirmative. And it may not be amiss to add that we had the pleasure, last fall, of seeing the Brahma cock to which our correspondent referred, and we have no hesitation in expressing our belief that he was the finest bird of his species that we have ever seen.

Having submitted J. C. G.'s note of inquiry to our correspondent, the following note has been received in reply:

"F. W. WOODWARD, Esq.: *Dear Sir*—Permit me to acknowledge your kindness in submitting for my perusal the letter of Mr. J. C. G., of North Carolina. There is no question as to the accuracy of the weights of the Brahmas as stated by me in the August number of the *HORTICULTURIST*; and I am glad to have it in my power to give an extract of a letter from an intelligent and impartial gentleman, referring to the cock to which allusion was made, which is a substantial indorsement of all I have stated. Mr. E. C. Comey, of Boston, writing under date of April 4, 1868, says:

"I have constantly tried to improve my stock of Brahmas (fowls which I admire beyond all others), without regard to cost or labor, for the past six or seven years, and have traveled a great many

miles in search of the finest specimens of this breed, but never found a bird that came up to my requirements and ideas until I saw your Brahma cock "Autocrat." I assure you that in him I was delighted to find what I have contended could be produced, while others said it was impossible,—that is, to have a *very large* Brahma, say 14 or 15 lbs. weight, and to have him handsome. Now, I am frank to admit that Autocrat is the largest in size, the most perfect in color, the most symmetrical in proportions, with the finest-shaped head and smallest pea comb of any Brahma cock that I have ever seen, and I would be willing to bet that his equal can not be found in the United States.'

"You can say to your North Carolina correspondent, that any communication which he may desire to make to me, will reach its destination if addressed to your care. E."

F. W. WOODWARD, Esq.: *Dear Sir*—My highly valued friend "P. W.," of Mass., having contributed to your September number an article upon the characteristics and merits of one of the popular breeds of French fowls—the Houdans—has intimated the wish that I would call attention to another of the foreign varieties which takes a foremost rank in France—I refer to the "La Flèche." Though the writer has never had any of this distinctive variety under his personal supervision, he has had the opportunity of seeing them frequently upon the yards of his friends, and of learning something of their excellences from various writers upon Poultry, and from what he

has seen and learned, he is satisfied that the La Flèche will prove a valuable acquisition to our poultry yards. A gentleman who is breeding these birds this season, in a recent letter says of them: "The chicks from my La Flèche fowls are rapid growers, are quiet in their habits, and are generally strong and healthy, and I am of the opinion that they will bear confinement as well as most of our domestic fowls. The La Flèche attains to greater size, when mature, than either of the other French breeds which I have imported."

As most of your readers are doubtless unfamiliar with this peculiar variety (as it has only been about two years since they were first imported into this country), it may not be amiss to describe them somewhat critically. The cocks, in plumage, are of a brilliant metallic black color, with long and broad backs and broad full breasts; combs branching and antler-like, like two horns pointing straight up; earlobes large and white; necks rather long, with thick but short hackles; thighs long and strong, and legs black or slate color, and without crests.

M. Simier, a French writer of acknowledged ability and of much experience, has recently written a pamphlet setting forth the specific merits of the different breeds of French poultry, and arrives at the conclusion that "for eggs and the table the La Flèche fowls deserve to rank with the very best." He says: "To this breed do we owe the grand poulardes so renowned, so remarkable by the delicacy of their flesh. They are better known as 'poulardes du Mans,' but they are all bought first on the market of La Flèche. It is a large up-standing bird, high on the legs, and well shaped; of a raven-black plumage, and possessing an abundance of white and delicate meat, and is singularly adapted for table purposes, from the ease with which it is fattened. It is not an early layer, the pullet being generally from six to seven months old when she begins to lay; she is not a winter layer; but when she begins,

(generally about February), she gives an uninterrupted supply of fine eggs until the moulting season sets in. She hardly ever sits, and when she does, is a poor mother."

The London *Cottage Gardener*, in referring to the La Flèche fowls which have been imported into England, says that the cocks are subject to sudden fits of illness, from which the hens seem to be exempt. The hens are said to be layers of very large white eggs, but as table birds, are not esteemed so highly as the Dorkings. The English epicures have an idea that no fowl with dark or yellow colored legs is as delicate in flesh as those with white legs; hence their preference for Dorkings; and this prejudice, I know, has followers to some extent in this country. Without attempting to enter the lists upon one side or the other of this question, the writer will conclude with the remark, that any young and well-fatted bird of any of the popular varieties is quite good enough for him. E.

ROMEYN'S SEEDLING STRAWBERRY is attracting some attention, and bids fair to take a place among the approved varieties. It was originated by William H. Romeyn, of Kingston, N. Y.; is a cross between the Wilson and the Triomphe de Gand, and has some resemblance to the Austin. It grows vigorously; the foliage is abundant and strong, and the plants do not require frequent re-setting. In Mr. Romeyn's garden are some specimens six years old, and they produced largely during the past season. Another advantage is in lateness, the Romeyn yielding good fruit ten days after the older varieties have ceased to bear. Charles Downing speaks favorably of the Romeyn. Valentine Burgeoin, of Kingston, a very successful cultivator, who has nearly all of the approved varieties, and grows largely for the market, says he gives preference to the Romeyn because he has found that it sells as well as the Triomphe, and bears better and with more certainty; and Henry H. Reynolds, cashier of the

State of New York National Bank, says that after a fair trial of all the favorite sorts, he has found none containing so many excellent qualities as the Romeyn.

PRESIDENT WILDER STRAWBERRY.—The following description of a new strawberry bearing the name of one of our most valued horticulturists, we take from the *American Journal of Horticulture*, which states it as the "substance settled upon by the Fruit Committee of the Massachusetts Horticultural Society."

"The plant is hardy, robust, vigorous, and very productive. The foliage is handsome and well developed; leaf, dark green, roundish, obovate, deeply serrated, of great substance, with stiff, short foot-stalks, and stands the extremes of heat and cold without injury. The flower-stalk is stiff and erect, the flowers perfect. The fruit is large, some specimens attaining to more than five inches in circumference; and many berries this year weighed more than an ounce avoirdupois each. Their color is brilliant crimson scarlet; form, obtusely conical; the flesh rosy white, very juicy, but sufficiently firm for market; flavor, rich and sprightly, inclining to sweet, with a distinct aroma of the Alpine or wood strawberry; seeds, small; season, late.

"This variety was produced in 1861 by Mr. Marshall P. Wilder, from artificial impregnation of Hovey's Seedling with La Constante."

WATCHING, as we do eagerly, every project for advancing horticulture in all its departments, we look especially to an improved *education for young gardeners* as one of the most powerful means of furthering the cause. Our profession is not a series of dead rules or authoritative laws, to be once mastered, and then known or forgotten for evermore. Neither is it, or ought it to be, an erratic series of progressions and restings, alternating with each other,—now marching onward under the banner of a Knight, a Loudon, or a Lind-

ley, and anon standing still because no such leader appears. No; such is not the road to the highest perfection. Every individual worker in the wide field of horticulture should feel that his path must be one of progress from good to better, from better to best. Because others have labored, can be no excuse for us resting upon their labors, but is a legitimate reason why we should enter *into* their labors, and carry them forward to a higher level. The highest attainments of all who have gone before us should be our starting-point on the highway of endless progression. Each worker as he delegates his work to others should give the parting admonition—"Not as though I had already attained, or were already perfect," but you follow after, if it be that you apprehend that perfection in art and practice that I have failed to reach. To forget, so far as to rest in them, the things which are behind, and to reach forward to those that are before, must be our watchword. Always learning and never coming to the full knowledge of the truth, must express the state of our intellect and the purpose of our lives, if the garland of success is to enwreath our brows, and the grace of humility to adorn our characters.

Between the fathomless mysteries of plant-life on the one hand, the immeasurable capacities of intellectual life on the other, and the difficulties inseparable to the control of human life in its relation to both, there is work enough to tax the strongest intellect and to try the soundest heart. But it is only by rising to the dignity and grandeur of our work that it can be properly done. While, therefore, fostering and developing to the utmost the marvelous capabilities of vegetable life, let us also carefully cultivate the intellectual life within and around us. Only thus can the progress of gardening become real, constant, cumulative. Now, it is by far too much a thing of fits and starts. One great man acquires eminence, and it is years before the rank and file reach his high standard. They first oppose, then

ridicule, then examine, then adopt, and finally rest at his point of progress. How all this happens, and how even eminence itself becomes a drag on the chariot wheels of progress, is most eloquently pointed out by a modern author in the following pregnant words :

"It is true that an original man is persecuted in his lifetime and idolized after his death; but it is a less familiar truth that the posthumous idolaters are the legitimate successors and representatives of the cotemporary persecutors. The glory of the original man is this, that he does not take his virtues and his views of things at second-hand, but draws wisdom fresh from Nature, and from the inspiration within him. To the majority in every age,—that is, to the superficial and the feeble—such originality is alarming, perplexing, and fatiguing. They unite to crush the innovator; but it may be that by his own energy, and by the assistance of his followers, he is too strong for them. Gradually, about the close of his career, or, it may be, after it, they are compelled to withdraw their opposition, and to imitate the man whom they had denounced. They are compelled to do that which is most frightful to them—to abandon their routine. And then there occurs to them a thought which brings inexpressible relief. Out of the example of the original man they can make a new routine; they may imitate him in everything except his originality, for one routine is as easy to pace as another. What they dread is the necessity of originating, the fatigue of being really alive, and thus the second half of the original man's destiny is really worse than the first, and his failure is written more legibly in the blind veneration of succeeding ages than in the blind hostility of his own. He broke the chains by which men were bound; he threw open to them the doors leading into the boundless freedom of Nature and of truth. But in the next generation he is idolized, and Nature and truth as much forgotten as ever. If he

could return to earth he would find that the crowbars and files with which he had made his way out of the prison house have been forged into the bolts and chains of a new prison, called by his own name. And who are those who idolize his memory? Who are found building his sepulcher? Precisely the same party who resisted his reform; those who are born for routine, and can accommodate themselves to everything but freedom; those who in clinging to the wisdom of the past suppose they love wisdom, but in fact love only the past; and love the past only because they hate the living present; those, in a word, and slightly to change the language of the eloquent author, who set up the inertia of the dead past in opposition to the life and power of the actual present."

It would seem impertinent to attempt to add to the forcibleness of these words. They are applicable to men in all ranks of life, but especially so to gardeners, who have too often attempted to bind the vigorous freedom of vegetable and intellectual life by the narrow ties of red tape, and the green withes of a sunless routine.—*Gardeners' Chronicle*.

THE ORIGINAL SCUPPERNONG.—J. Van Buren writes to the *Southern Cultivator* that "The original vine of the Scuppernong Grape is growing on Roanoke Island, and was first discovered by the colony landing with Sir Walter Raleigh in 1654 or 1655, and is probably the oldest vine known at the present day." Mr. Van Buren still considers his estimate of the Scuppernong producing 1,500 to 2,000 gallons of wine to an acre, as a fair and not an extravagant one, where care and proper attention and cultivation are bestowed. We would here give one word of advice to those about to plant this variety, which is, not to use any stable manure, but simply rich earth from decayed leaves and other vegetation.

Those who expect this vine to grow vigorously in an old broomsedge field, and

yield an abundant crop of fruit, will find their expectations to end in disappointment. And again: it will not do to plant in too rich a soil, for then its growth is too rampant for years, until it exhausts the soil, before it will produce fruit abundantly. Land that will bring 20 to 25 bushels of corn per acre is sufficiently rich for this grape—not low and wet, but dry, and inclined to sandy.

Our readers will remember that this grape, so far as well tested, is only valuable in the South.

WASH FOR THE PEACH WORM.—R. J. Moses, in the *Southern Cultivator*, says: "After taking out the worm from the peach tree, make a solution (mixed with a little cow dung or clay) of the Plant Destroyer, which is a chemical result of petroleum, and can be had at 118 Elizabeth St., New York. Wash the trunks of the trees with this, and the fly will cease to deposit the egg by which the worm is produced. A yearly application of this solution will, I think, effectually rid you of the peach worm."

This present month is a suitable time to examine peach-trees, and to destroy the worm—and it is a labor and duty in peach growing essential to success. If any of our readers should use the wash above named, we hope they will report to us of results; but we advise them not to trust to it without looking over their trees next May or June.

GLASS-HOUSES.—Those of our readers who intend to erect houses for use the coming winter, or to be planted with vines or trees the following spring, should have commenced operations, so that everything may be in readiness before the approach of frost. Scarcely any lover of plants can dispense with protection of some sort for his half hardy pets, which have added so much to his pleasure and the gratification of his visitors during the growing season, and which must otherwise succumb to the

winter's frost. To those who can not afford a more expensive structure, and who are willing to give to it a very small amount of attention, a cold pit has many advantages over the usual practice of putting plants in a cellar.

Such a pit should be permanent in its character, and located in a spot easy of access to the house, that it may receive proper attention during the winter. A convenient size, and one sufficient for an ordinary garden, would be ten feet long by five wide, varied somewhat from these dimensions to suit size of glass in sashes. The pit should be excavated four feet and a half below the surface, and a hollow wall of brick built up to one foot above the surface. Six inches in depth of coarse gravel should be placed in the bottom, on which the pots containing the plants rest. Shelves may be also placed around the sides for the smaller plants. The wall above the ground should be "banked up" to within three inches of the top, and sodded.

Double sashes, we have found, give great protection, and save attention in covering the pit. The bars of these sashes are "rabbited" on both sides and double glazed, thus inclosing a stratum of air affording a good non-conductor of heat from within, or cold from without the pit. The plants when first put in the pit will require to be watered, and the sashes opened during the day, until cold weather. But little water is required during winter, as the plants are in a state of rest, and partial dryness at the roots is of advantage. In very severe weather straw mats would be required, but the double glass would keep out 10 to 15 degrees of frost. Some ventilation must be given on mild days, when the sun is bright, to carry off the dampness, but in dull cold weather all should be kept closed up. Camellias and azaleas do admirably in such quarters, and can be brought into the dwelling and flowered at any time during the winter. Many plants grow with surprising luxuri-

ance after remaining dormant in such quarters all winter. As the season advances, in the spring ventilation must be given during the day, closing the sashes at night until the weather becomes mild, when they may be gradually removed altogether.

We have never advocated the erection of cheap structures for growing plants, unless they are intended for mere temporary use; or if the owner is willing to repair them frequently to an extent of an entire renewal in from six to ten years.

The general plan of horticultural structures may be as perfect as possible, but if the details are not well carried out, and especially if the workmanship be not good, they will prove a source of never-ending vexation and expense. Insecure foundations, ill-fitting doors and ventilators, imperfect glazing and inferior workmanship of every description, are evils that skillful gardeners have to contend with, and upon whom the consequences of such defects usually fall, when they should be placed upon the shoulders of the constructor.

Methods for building cheap graperies and green-houses have often been described, and we find many of these imperfect and temporary structures scattered through the country. Such buildings may be cheap as respects their first cost, but their durability is a question which should enter into the calculations of their builders, as well as the consideration of the original outlay. After a year or two we find them with open joints, leaky roofs, and decaying foundations. The inferior and temporary character of materials and workmanship is often a source of serious loss to their owners, and every building of this description demonstrates the mistaken and short-sighted economy of its projector. It is much wiser and truer economy to expend at the outset a sufficient amount of money and care to make the structure permanent, and to obviate the necessity of constant repairs. Experience has taught us that if they are well and substantially built, these structures will endure for twenty years

with very few repairs except an occasional coat of paint. It need not be demonstrated that the profit and gratification to be derived from a well-built house far exceed those accruing from a cheap and imperfect one, with escapes for the heat in winter, and inlets for cold air and driving snow and rain.

OLEANDERS.—In our rambles about the country we are frequently asked as to the best time for cutting in or pruning oleanders; to which we reply, cut them back just as soon as they have flowered. They will then push freely and bloom next season again. We have occasionally known them to bloom late in the season when pruned back in the spring, or when first brought out from cellar or store room, where oleander plants are generally kept by those growing and admiring them and who have no green or glass houses. When cutting back, do so with reference to the leaving of some young shoots, and also of dormant indistinct buds. A little yearly pruning back and of shortening in side branches would convert many a tall, stern, ragged-headed oleander into a round, compact, beautiful-shaped plant—of half its former height, but double its breadth.

HAVING noticed an inquiry some time since in the *Tribune*, which was made at the Farmers' Club, New York, and having pretty extensively examined Virginia on the subject of that inquiry, it occurred to me that some of your readers might be interested in my investigations.

The inquiry was, "Can the Catawba grape be successfully grown in Virginia?"

I have seen that vine in my travels here in all its stages of growth, and several times during its fruiting season. I have never noticed any mildew, and hardly any rot. There are vines on the place on which I am now staying, in fruit,—the clusters perfect as any I ever saw, the leaf perfect as in June. The wine from this grape was highly esteemed here during the

war, and one large vineyard made a great deal of money. I think I can say, then, that the Catawba grape, as well as all our new varieties, may be successfully grown in this neighborhood—which is about twenty miles from Washington, and near the Orange and Alexandria Railroad. It is a healthy country, abounding in springs of soft water. Good grape lands sell at from \$10 to \$25 per acre. The people are friendly, and desire Northern emigration. The valley lands grow grass, wheat, corn, etc.

STEBEN.

CENTERVILLE, FAIRFAX Co., VA., Sept. 5, 1868.

HYBRIDIZING THE GRAPE.—From a report, published in the *Canada Farmer*, of Hon. Wm. H. Mills, President of the Fruit-Growers' Association of Canada, we extract the following, showing the attention our Canadian brothers are giving toward producing new varieties of the grape and other fruits.

"Mr. William Saunders, of London, Ontario, has, with much skill and labor, produced this season the following results in hybridizing, and has kindly permitted me to lay them before you.

FEMALE OR BEARING VINE.

	<i>Berries.</i>
Clinton—with Syrian pollen.....	set 18
" " Muscat Hamburg, 2 bunches.....	" 0
" " 1 failed, the other set.....	" 1
" " Buckland Sweetwater.....	" 30
" " Muscat d'Avut.....	" 8
" " Black Hamburg.....	" 5
" " Grizzly Fontignan—failed.....	" 0
" " Black do. do.....	" 0
" " Chasselas Musque.....	" 5
" " Royal Muscadine.....	" 22
" " Victoria Hamburg.....	" 19
" " Rose Chasselas.....	" 13
Total.....	121

OF GOOSEBERRIES.

Houghton's Seedling with Warrington pollen.....	set 6
" " " Roaring Lion.....	" 2
" " " White Smith.....	" 1
" " " Brown Girl.....	" 5
" " " Ashton's Seedling.....	" 2
" " " Crown Bob—failed.....	" 0
Total.....	16

"Eight or ten flowers were operated on in each case, excepting Crown Bob, which was used on five only. He also operated on six or seven flowers of the Philadelphia Raspberry, with the Brinckle's Orange;

such were his results. Mine were as follows: I was unable to fertilize the Delaware with the either the Black or Muscat Hamburgs, while one took readily with the Diana.

<i>Males.</i>	<i>Females.</i>	<i>Clusters.</i>	<i>Berries.</i>
Black Hamburg.....	Delaware.....	2	set 0
Muscat do.....	do.....	1	" 0
Chasselas de Fontainebleau.....	do.....	1	" 6
Rose Chasselas.....	do.....	1	" 1
" " " Diana.....	do.....	1	" 13
Chasselas de Fontainebleau.....	do.....	1	" 24
" " " Rebecca.....	do.....	1	" 0
" " " Isabella.....	do.....	1	" 0
Muscat Hamburg.....	Diana.....	1	" 26
Bowood Muscat.....	Rogers' No. 4.....	1	" 27
Delaware.....	do.....	1	" 17

Total..... 114

Mr. Saunders' total..... 121—225

"So slow and tedious is the process, it will be observed that only a limited amount of labor can be performed by one person during the time of flowering. Mr. Saunders exceeds me by seven berries. Now to test the quality of only a portion of these which may survive the vicissitudes of germination and other mishaps, it will take from six to eight years."

AMARYLLIS SEED SOWING.—The seed should be gathered when ripe, and we prefer to sow it at once in pots well drained, and filled to within an inch of the rim with a compost of two thirds rich yellow loam, and one third sandy peat. We then put on a little of the same kind of soil, but finer and dry, make the surface even by patting it with the bottom of a flower-pot, scatter the seed over it rather thinly, and cover with a quarter of an inch of fine soil, the least possible depth being left to hold water. The pot is then placed on a shelf in the stove, and it is not watered until the beginning of February, when the soil is moistened by a gentle watering. We then plunge the pots in a hot-bed and encourage growth, keeping the soil moist. The pot remains in the hot-bed as long as there is any heat, and the soil is preserved in a moist condition, and a good heat is given so as to keep the young plants in a growing state as long as possible, but giving a short rest by diminishing the supply of water in November, December, and Jan-

uary. In February they are again placed in a hot-bed, and forwarded in a brisk heat with plenty of moisture, and when they have made a growth, which they will do by June, we pot them off singly in pots about four times the diameter of the bulbs, and so that the bulbs are buried to the neck. They are again returned to the hot-bed, giving water abundantly and atmospheric moisture, keeping them well supplied with moisture up to October, when the supply is diminished; but so long as there is foliage, give enough water to keep it from flagging. The pots are top-dressed in January, removing the old soil down to the roots, and it is replaced with rich rather strong loam from rotted turves. Do not disturb the roots or interfere with the ball, but if the drainage be defective rectify it. Plunge the pots in a hot-bed, encourage growth with water as required and atmospheric moisture, and in May shift the plants into a larger size of pot, not disturbing the roots or ball beyond removing the crocks and any soil not adhering to the roots. Return the plants to the hot-bed and keep them growing as long as they appear disposed to do so, giving a good supply of water; and when growth ceases, remove them from the hot-bed by degrees and set them on a shelf in the full sun in the stove, giving water so as to prevent the leaves flagging, diminishing it, however, when these show signs going off, and keep the soil rather dry during the winter. These plants by the third year will have strong bulbs for flowering, and the treatment is then the same as for old plants. If inconvenient to sow the seed when ripe, it may be kept in a dry place and sown early in February. We have kept it in silver sand in a flower-pot in a stove until February, and we can not say which is the better plan; both proved good.—*Cottage Gardener.*

CHRYSANTHEMUMS as they come into flower require plenty of water and liquid manure to produce fine blooms.

CLEAN UP.—Not alone should the careful horticulturist clean his garden and grounds of all noxious weeds and scattering litter, but he should clean up in the roadway fronting him, whether on his own or neighbors' side. It is not specially creditable to any one to see the roadway in front of his grounds abounding in weeds or scattering litter, brush, old rails, or rotten posts, etc.; and we never enter such without regret that the owner could not be supplied with just one pair of glasses to see himself as others see him. Aside from appearance, it is a matter of economy to clean the ground adjacent and in front, if possible, of all weeds, for, if left there, seeds will surely vegetate next season in your own grounds, causing you labor and annoyance.

IOWA HORTICULTURAL REPORT.—Our thanks are tendered to W. W. Beebe, Esq., of Dubuque, Iowa, for a copy of the Report of the Iowa Horticultural Society for 1887.

In plain practical matter of instruction in fruit and tree growing; in satisfactory evidence that Iowa is a good fruit-growing State, and an advice toward the best interests of horticulturists in the Western States, it is full to running over, and every fruit-grower in all the great West should obtain a copy of it if possible, and read it carefully. We congratulate the Secretary on having been enabled to gather so much of valuable matter in one little book, and thank the writers for the freedom and good sound sense they have displayed in giving expression to thought and judgment without any previous bias toward a fixed rule or practice.

A GOOD TIME COMING FOR NURSERYMEN.—From all we can learn, there is a prospect of an extensive trade in all kinds of nursery stock the coming fall season, and those who are prepared to supply the demand, and have notified the public of their ability to do so, may hope to be well remunerated.

FALL TREE PLANTING.—The earlier in autumn that tree planting is performed the better, provided the wood has matured. It is not requisite that the leaf has fallen; but in transplanting, the leaf should be removed ere the tree is dug from the ground; keep the roots from drying cold winds or clear hot suns, and when setting spread them out regularly, and see that fine earth is next against each and every fiber; for where one root is laid against another without soil intervening, it is liable to dry and decay, and often destroy the whole tree. Do not pour water in among the roots at this time of year, but press and mingle the earth carefully with the hand and spreading fingers. Mound up around the tree earth about eight inches high, to assist it in retaining its upright position and also to carry off surplus water, for no matter how carefully the tree be planted, if water is permitted to stand around it and soak the roots from day to day, it may be expected to die.

BUY THE BEST.—It is hardly necessary for us to caution against, or repeat our advice in favor of, the purchase of any tree or vine simply because it is offered at a low price. The buyer should always remember that the "laborer is worthy of his hire," and that the grower of trees and plants for sale has no easy item of life; but if he pursues his profession with regard to sustaining a favorable reputation for integrity and honor, must give his own personal attention to it, and for that attention deserves and must receive a fair compensation. The purchaser of trees, therefore, should make his order, and then add, "Send me the best trees you can, and charge accordingly." One good, well-rooted, well-grown tree or vine is worth half a dozen club-footed, unripe wooded ones.

THE application of manure of whatever sort to orchard or vineyard should be in the autumn rather than spring. The rains

and frosts of winter assist in disseminating and distributing it by dilution among the soil, and thus render it in condition to be absorbed by the roots early in spring, and by them applied in promoting an early and healthy vigorous growth. If the manure is slightly covered by shallow plowing, no evaporation or loss will take place; or if after the application of the manure a sowing of land plaster (gypsum) be made, it will retain any ammoniacal gases that would otherwise be lost.

BEANS.—I have grown for two years a variety of bean which should be cultivated in every garden, as I consider it superior to any snap bean in cultivation; and in the future shall cultivate no other. I refer to the Giant Wax Pole Bean. But as I may have pole beans on the brain, I send you some as a sample, and hope you will give your readers your opinion; for pet beans are like the last new vine or young crows,—every one thinks his own the whitest.

AL FRESCO.

[The beans came safely to hand; we tried them, found them very superior in quality, and resolved to plant a large patch of them next season. Let our readers who are fond of beans make a note of this and secure seed in time. We presume every seed store has it for sale.—Ed.]

NEW FRUITS.—From our exchanges we gather record of quite a number of fruits introduced for the first time to public notice. Of new seedling strawberries, one originating with Marshall P. Wilder is highly praised by some Boston pomologists. Another, under name of *Colfax* Strawberry, is introduced by Messrs. Purdy & Johnson, Palmyra, N. Y., as possessing every desirable requisite without a fault. The same gentlemen also introduce a Black Cap raspberry, under name of *Mammoth Cluster*, and claim it as the "best and most profitable raspberry ever brought before the public." The Cincinnati Horticultural Society have had shown at their

pleasant and interesting weekly meetings one or two seedling cherries, two seedling pears, and two or three seedling raspberries, which have been favorably spoken of by the committee as worthy of further trial.

"THERE is a tide in all things, which, taken," etc. Just now there seems to be a tide flowing toward the naming of new varieties of fruits after some prominent man of the times, no matter whether he is connected or interested in horticulture, politics, or religion. This may be all very well, but we confess we can not so understand it; and yet it may be right, for in all probability the newly introduced fruit will go into oblivion about as soon as the politician of the day. Naming a fruit or plant after some eminent horticulturist is well; but we confess, then, that if we were the horticulturist so to be commemorated, we should like to know that our name be attached to some fruit destined to record us favorably and perpetually in all sections. We should count it no credit to be attached by name to a fruit which could only be expected to live in the minds and gardens of our fellow-laborers until their fruiting it had shown them the object of the man who disseminated it. To our mind, it is better to give to each fruit a name that in its significance denotes some characteristic of the fruit, relative either to color, delicacy, productiveness, long keeping, etc., rather than the name of a person, no matter how deserving that person may be of remembrance. It certainly seems to us more in strict harmony with true principles, for then, on hearing or speaking it, the association would remain with the fruit or flower, rather than be carried to remembrance of a name that in reality has with it no significance.

PEACH-TREES should be carefully examined at this season, and the worm (*agria*) taken away from its harboring-place near the crown of the tree. Remove

the earth a couple of inches deep, and observe any gummy or punctured spots; and then, ten to one, by cutting with a sharp knife, you will find a small white grub or worm that as yet has done but little or no material injury, but if left unmolested by the coming spring, would be found to have almost completely girdled the tree. Dig out the grub now—wash the wounds with soft soap to destroy any worms that the knife failed to reach by reason of oversight on the surface, then draw up the earth in mound form about one foot high close to the body, which mound, if leveled next April, will exhibit at once any worms which now have been left.

PERENNIALS.—This present (October) month is one of the best for transplanting and dividing perennial plants; and as flowering perennials are among the easiest cultivated in forming a flower garden, and abound in great diversity of foliage and color of flower, they should be freely planted in every garden. Prepare the ground by digging it fully one foot deep, and mingling—unless already rich—a quantity of well-decomposed manure or compost. Obtain the plants from a reliable dealer—order good strong roots—plant them carefully, and then spread a light covering of coarse straw manure, say two inches deep, over all for winter protection.

HARDY APPLES IN MINNESOTA.—In the transactions of the Hennepin County Horticultural Society, Minnesota, Peter M. Gideon, Esq., gives as his experience (and which is apparently concurred in by the Society), that the past winter was the most severe upon fruit-trees of any experienced. Among the apples that have stood best, the Crabs come first, next Duchess of Oldenburgh, followed by Winesap, Blue Pearmain, and last, Red Astrachan, which has proved the most tender. The same authority sets hardy seedlings as ranging at about one in 40,000 capable of the same endurance as the varieties named.

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TOMATOES, A COMMERCIAL STAPLE.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

It must be evident, even to an ordinary observer of what is taking place in American agriculture, that some very remarkable revolutions are going on around us, and that within a few years past some have actually been accomplished. These revolutions embrace the lowly as well as the loftiest productions of the earth, the common garden vegetables equally with the rarest exotics. Their effect has been, in various instances, to elevate what was formerly an insignificant garden product into a great commercial staple. In none of them has this transmutation of values been more remarkable than in the rank which the tomato has been made to assume. This now popular esculent has been domesticated in this vicinity ever since the refugees from San Domingo first brought it with them. Our warm and stimulating soil was soon discovered to be peculiarly adapted for producing it in the highest perfection; but it was long in working its way up to the position of a general favorite in the market. Its taste and flavor were new sensations, not often relished when first tried, and required time and repeated effort to make them generally popular. The most

extensive cultivator in New Jersey raised the tomato during six years before venturing to taste it. But two generations having been educated to appreciate the gastronomic seductiveness of the tomato, and medical science having shown it to be eminently wholesome, the masses are now devouring it with an avidity which has worked one of the most surprising among the revolutions referred to.

As a demand grew up for tomatoes, so producers became keen to supply it. Our truckers quickly attained to great expertness in causing them to ripen early, thus securing enormous prices for the first week's picking. The seeds are planted in a hot-bed, and when grown a few inches high, are shifted into other beds, sometimes twice or thrice. Each transplanting was soon discovered to have two important advantages, that of checking top growth, and increasing the quantity of roots, the grand result being that the plants oftenest shifted were sure to ripen their fruit in advance of all others. Advantage is taken of a cloudy or rainy spell in June to transfer them to the open ground. Cross furrows having been made with the plow, a good shovelful

of well-rotted manure is dropped at each intersection, and covered with the hoe. Others open the furrows without crossing, and drop the manure at intervals where a plant is intended to be set. Generally, an acre is made to contain 2,500 plants. The latter are next taken from the hot-bed, with a mass of roots inclosing as much earth as possible. A boy drops them at the proper locations, and is followed by a man, who with his hand opens a hole in the soil above the manure, and covers the roots by pressing the earth hard around them, using his hands only. One boy will drop as fast as two men can plant. Should the weather be warm, and there be no rain, but clouds only, the afternoon towards nightfall is chosen for planting. This mode of planting is practiced only with such as are to come earliest into market. With what is known as second early, and late tomatoes, the plants are dropped directly on the manure, and the furrow closed with the plow.

Now as the young tomato plant requires a large and unintermitted supply of moisture, this transfer from the hot-bed to the field, by cutting off the supply, occasions a sudden wilting, quite alarming except to those familiar with the habit of the plant. The top falls over and lies flat on the ground, especially if the sun should unexpectedly shine out, and more especially if transplanting while under glass has been omitted. But the plant, though wonderfully sensitive, is also wonderfully hardy, and will survive wilting and drought in a remarkable manner. Such as have been repeatedly transplanted grow short and stocky, and generally hold their heads erect. In a few days they go on growing as if they had suffered no disturbance. Those not so transplanted, run up spindling, and wilt the most. The ground between the rows is kept clear of weeds. No staking of any kind is practiced in field culture, the bushes, as they increase in size, lying over on the ground. It would require the branches from more than one extensive

forest to stake up the quantities of tomatoes raised among us. Moreover, it seems quite certain that the heat reflected from the hot soil has much effect in hastening the crop to maturity.

In producing tomatoes for market, earliness has been the great desideratum which all growers have labored to secure. The first, even when only half colored, command from \$4 to \$5 per basket of three pecks. So universally popular has this esculent become, that the public appetite grows impatient for the first half-ripened supply. Hence there have been numerous efforts to originate new varieties, in hopes that some of them may prove earlier than those already cultivated. It is said that not less than forty new seedlings have been brought before the public since the tomato culture has grown to be so great a business. Others have been imported from the Fejee Islands and Japan. In this crowd of novelties some varieties have been found better adapted for a great market trade than the original West India tomato; and though not better flavored, yet in this quarter they have almost entirely driven the latter out. Our growers now prefer the Tilden, as being smoother and finer in appearance, larger in size, firmer, and a much more generous bearer. Indeed, when properly cultivated, it shows itself to be very productive.

This new aid to a growing business is one of those certain corollaries which are developed in agriculture or horticulture whenever there is seen to be occasion for them. Demand inevitably creates supply, and generally with improvement in quality. It was seen that tomato culture had grown into a staple business, with every prospect of immense extension. There was room for improvement, with a fair promise of profit in accomplishing it. Hence ingenious propagators originated better varieties. But while conferring lasting benefits on cultivators, they secured for themselves only an ephemeral profit from the sale of seeds. Having no patent on their invention, the sales of one or two seasons ex-

hausted the harvest, though they opened a perpetual one to others. But the effort to produce new and better varieties continues. We shall yet hear of some one which will outstrip in productiveness all its predecessors, and probably run up the ordinary yield of an acre to a thousand bushels.

The tomato crop, only a few years ago, was subject to the most extraordinary market fluctuations; good prices, during one week, were succeeded by others so low as not to pay for picking; at other times no sale could be found at any price, and thousands of baskets were thrown into the dock. The growers stopped picking whenever the price fell below twenty-five cents per basket. There being no demand at home, the fruit was allowed to perish on the vines. Thus, when the first rush of the market had been supplied, the long summer during which the various plantings were ripening their crops, produced but meagre returns. It is true that the late crop was uniformly remunerative; but even of that a valuable portion rotted on the field. It seemed clear that the market was overstocked, and that the whole profit must be realized from those portions of the crop which came first and last into market. It must not be supposed, however, that when prices sunk to zero, it was because the public ceased consuming, for such was not the case. Consumption went on as impetuously as ever; but the glut was overpowering. No community had stomach of sufficient capacity to keep up with it. The cause was here. In the effort of the grower to get one or two hundred baskets into market at \$5 each, he was compelled to plant many acres. These acres, when in full bearing, yielded so prodigiously as to overdo the business. Every grower proceeded on the same plan. None had enough tomatoes at \$5 per basket, but all had too many at zero. The business thus required something to equalize these discrepancies, some balancing agency by which the prodigious waste of the summer surplus could be utilized; in other words, a certain

market at fair prices for that portion which annually perished on the vines. Yet it may be noted that, notwithstanding this waste, the tomato culture grew larger annually, because it was, with rare exceptions, an exceedingly profitable business.

But every emergency has its remedy. The regulating agency came at last through the operation of the canning process. Establishments were organized in the large cities where gluts occurred, and stood ready to sweep the market clear of berries and tomatoes whenever they touched a certain figure, the former at about ten cents, the latter at twenty-five. These concerns were soon able to absorb everything in their line. They bought up cargoes of perishing berries for which the dainty public had no stomach, and no avalanche of tomatoes was too huge for their capacity. One of these establishments in Philadelphia has employed four hundred women at a time in canning fruits and tomatoes, and consumed in a single season \$30,000 worth of sugar. The canning business thus became a power in the market. It terminated the reign of gluts, made the grower certain of remunerative prices, stopped the practice of emptying cargoes into the docks, and so effectually balanced supply and demand as to protect all parties from loss, besides giving new momentum to the whole trade.

The art of canning is thus revolutionizing some branches of agriculture. It seizes on the most perishable fruits and esculents, such as must be sold immediately, and by preserving them for future use, distributes their consumption over the entire year, in place of crowding it into the brief period of ripening. The products of the canning factory became immediately popular. Establishments were rapidly multiplied, as the business was found to be profitable. Some were located where the desired productions were cultivated. Six years ago, the pioneer establishment of this vicinity was started in Burlington, N. J.; two others have since been built, and two additional ones have been put in operation within two

miles of us. All these are large concerns. The three in this city employ, in the busiest seasons, some six hundred hands, two thirds of whom are females. The vast quantities of tin cans which they require are mostly manufactured on the premises. During the tomato season, long lines of loaded wagons are seen driving up to their doors, piled high with full baskets. On every road leading in from the country, these loaded wagons may be met, all having a common destination. Boilers of forty-horse power are used for generating steam with which to cook the tomatoes sufficiently to loosen the skin. A large wire tray containing them is lowered by rope and tackle into the boiling water, and after a few minutes' cooking they are taken out and deposited on long narrow tables, on both sides of which are stationed women and boys, who remove the skins and crowd the tomatoes into cans. These are then taken to men close at hand, who solder on the tops, in which a small puncture is left open. They are then lowered, in other trays, into vats of boiling water, taken out, and the puncture closed by a drop of solder. They are then labeled and boxed for market. Wherever machinery can be advantageously used, it has been introduced; but the larger portion of the work is necessarily done by hand. The three establishments require large capitals to carry them on. They disburse weekly several thousand dollars for wages, and a much larger sum among the farmers. Most of the operatives work by the piece, the young girls and women each earning six to ten dollars per week.

On going over one of these factories, a stranger will be astonished at seeing an almost indefinite collection of tomatoes. Wherever he may turn he sees them piled up by dozens of wagon loads, with additional quantities continually arriving. If it were not for the activity of the great army of women in the canning department, who are constantly drawing on the huge accumulation in the long sheds attached to

the factory, the glut would be as decided here as it has ever been in the city markets; but they dispose of many thousand cans per day, thus keeping up with the supply. Another question will occur to the stranger: Where is a market found for this extraordinary quantity of a single esculent? But the answer is astonishing as the inquiry is natural. All that these establishments can manufacture is sold in advance, and there are more orders than can be filled. The products are distributed over the country wherever there are railroads to transport them. The great cities consume them in incalculable quantities. Canned tomatoes are the daily favorite dish, from autumn to summer, on the tables of thousands of the principal hotels and boarding-houses. Private families are constantly consuming them. Every vessel that sails the ocean has the canned tomato among its stores. It is found in every eating-house in the mining regions of the Pacific slope; in fact, wherever population congregates, there, it seems, this modern preparation has already penetrated. Its popularity has become so universal, that one can scarcely over-estimate the magnitude which the business of producing and canning it is destined to assume.

Here is a vast trade grown up among us within six years. Its effect upon the neighboring cultivators, in this brief period, has been most remarkable. The old fear of an over-supply of tomatoes has disappeared. In place of going abroad to seek a market, the market has come to them. These factories now contract to purchase crops of any extent before they are planted. Already they consume the product of nearly a thousand acres lying within three miles around us, not of tomatoes only, but of pickles, sweet corn, peas, beans, asparagus, and other crops. For most of these they pay prices agreed upon when the contracts are made, such as, with rare exceptions of the season, give the grower handsome profits, as he saves freight to the city, and commission. In the instance of tomatoes,

the large quantities which formerly perished in the field now produce money, not a bushel being lost. It is true the grower agrees to deliver his entire crop, and thus foregoes the higher rates he might otherwise secure on his earliest and latest pickings. But then he exchanges uncertainty for certainty. The sum realized at the factory is probably equal to the average afforded by a fluctuating city market, as the contract system continues to be a popular one. Under it, even the unripe tomatoes, at the season's close, are gathered before the frost sets in, and are carefully ripened under glass. Everything is thus converted into money.

This present year the tomato crop has been large and profitable. Our cultivators are annually increasing it. The production, great though it already is, may still be considered as only in its infancy. Under the stimulating influence of a steady cash

market at the very door of the producer, no one can say how extensive the yield may become. A few years have already revolutionized it here. This revolution must necessarily continue, and will assume new phases not at present contemplated. Other factories will spring up among us to compete for the increasing demand, until this location becomes a vast manufacturing center. This enlarged market will lead to better modes of cultivation. Ingenious minds, seeing that an obscure garden esculent of thirty years ago has taken rank as a great commercial staple, will make fresh efforts to discover and introduce better and more productive varieties, until the maximum, if there be one, shall have been attained. The tomato culture will become with many persons a specialty, and thus, without doubt, afford a higher profit than if grown as a mere appendage to a mixed husbandry.

A REMARKABLE ORCHARD HOUSE.—In the garden of E. W. Harlock, at Ely, Cambridgeshire, is an orchard house deserving the above term, not so much on account of its architecture—it is very plainly built—as on account of its contents, for it is simply a span-roofed house, 100 feet long, something under 30 feet wide, and some 15 feet high, its sides of boards, with a ventilating shutter on hinges at each side, and no roof openings; in short, the same method of low side ventilation originated at Sawbridgeworth many years since, and found so successful there. It is the contents of Mr. Harlock's orchard house that make it remarkable, for it is a perfect forest of peach and nectarine trees, the like of which can not be found in Europe. The trees are all, or nearly all, pyramids, growing in large pots and tubs, varying in size from 20 to something under 30 inches; they are from 8 to 10 or more feet in height, and not pinched in closely, as is so

necessary in small houses, but the shoots are encouraged to make a vigorous growth, and only occasionally pinched in, in summer, to make the trees symmetrical or to suppress excessive vigor—for the trees are well fed in summer by surface dressings and liquid manure applied judiciously. The result of this sound culture is the utmost vigor and fruitfulness in the trees; and it is difficult at first sight to take in the idea that you see trees growing in pots standing on a hard floor, so that they can not root into the border. Many of these grand trees have borne from two to three pecks of peaches each, many of the later kinds are still in perfection, and all the fruit has been of the largest kind and finest quality. When it is brought to mind that a house of the dimensions given has and will produce some thirty or forty bushels of peaches, it seems strange that our market gardeners do not do likewise.—*Gardeners' Chronicle*.

THE QUINCE.

COMPARED with the money returns derived from the sale of its fruit, the quince has received less attention and less extended cultivation than it deserves.*

No fruit-tree can be more easily grown, none come into bearing as soon, none are less subject to blight or decaying influences, and, so far as we have observed, no fruit crop pays as well, acre for acre, one year

with another, as the quince. We have repeated records of over eight hundred dollars' worth of fruit being sold from an acre; and as we write have before us one recording two hundred baskets of fruit as having been gathered from an acre of trees only four years planted. This last is certainly a large yield, but the owner gave to the land good, careful cultivation, and has

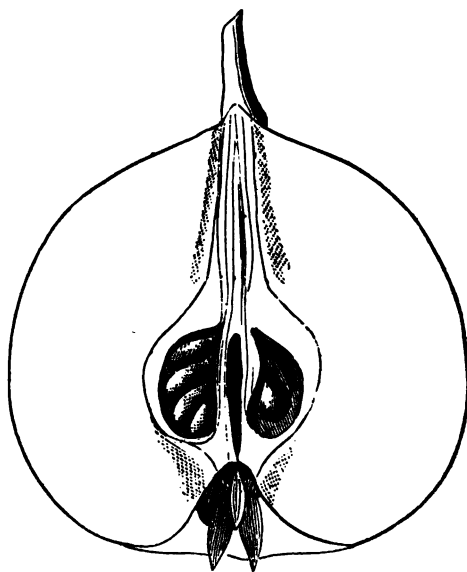


FIG. 98.—*Apple-shaped Quince.*

realized full compensation therefor. In our own grounds we have trees three years out, from which we this year have gathered half a bushel of fruit that sold readily at four dollars a bushel. The quince can be grown in almost any soil, and while it succeeds admirably in deep, rich, moist, strong or rather heavy land, it also grows and fruits

finely in light sandy soil, provided a plentiful supply of manure be applied annually. Young trees can be purchased at almost any nursery, and it can be readily grown from cuttings in the ordinary way of all outdoor hardy plants. The planter will find, however, that the cheapest and best way is to buy good, strong, bushy plants about four feet high, as such plants will return in three years a crop sufficient to pay all past expenses. In planting an orchard, the

* Is it not a little remarkable that one of our best pomologists and writers fails to name or describe the quince in a late edition of his work?

usual distance has been twelve feet each way, but we incline to the impression that eight by eight feet is better, and when the trees become too much interlocked cut out every other one. The receipts in the mean time will have more than paid cost; and if the trees are grown in the bush form, with two, three, or more main stems starting from one principal crown, they will soon occupy nearly the whole ground. While the trees are young, or so long as they can be worked among by horse power, the surface of the

ground should be regularly and carefully cultivated at the depth of say three inches, applying salt and well rotted manure annually. In our common gardens one or two quinces are usually found, and they are generally planted in some by-way corner, never obtaining any attention, thought, or labor, except at the time of gathering the fruit; and because in such neglected manner they do not always produce fine golden fruit in abundance, too many are disposed to condemn it as an unprofitable tree. Let the

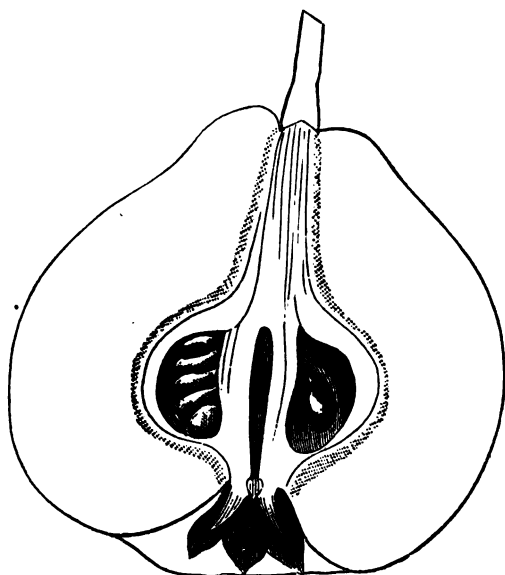


FIG. 99.—*Angers Quince.*

owners of all such trees hoe the ground clean of weeds and grass from beneath them, apply a liberal surface-dressing of well-rotted manure, cut away all the dead branches, and as the tree changes from mere life to full vigor and health they will change their opinion of its unprofitableness. In varieties there is something to choose, the orange or apple-shaped being most commonly grown, and counted best. Too often, however, seedlings of this variety have been grown and sold as the true

orange, and hence we sometimes find trees that puzzle us terribly to decide the variety to which they belong, as although the quince when grown by itself will give plants from its seed more nearly alike the parent than any other fruit, yet they are rarely, if ever, identical. The true apple quince has rarely any bulge or knob at the stem, but is as represented in our outline.

Seedlings from this variety produce occasional true-formed specimens scattered over the tree, while the majority of the fruit will

have more or less of a neck or knob next the stem. The flesh of the Orange when fully ripe is of a pale orange yellow, and cooks quite tender. If gathered before ripe, it is rare that the best of housekeepers can make anything but hard preserves from it.

Rea's Seedling is something similar to the Orange, but almost always has the knob near the stem. It is claimed by good hor-

ticulturists to be larger and better than the Orange, but our experience has not been such as to induce us to prefer it.

The Portugal is a variety but little grown, we suppose because of two reasons, viz.—it matures early before really needed, and produces only moderate crops. It is one of the richest in color of flesh when cooked, becoming a purplish crimson, and

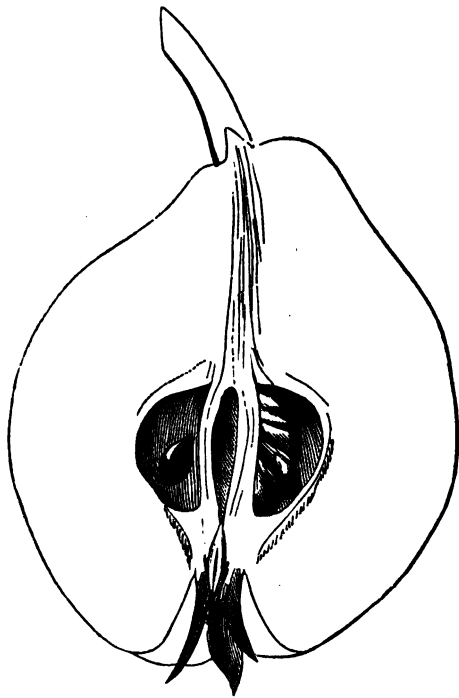


FIG. 100.—*Pear-shaped Quince.*

cooking very tender. It is easily distinguished when in foliage by its very broad, large leaf.

The Angers Quince, so much used for stocks on which to work the pear, is in point of profitableness for market, in size of fruit and productiveness, fully equal to the Orange, but the flesh is a little harsher and more acid. It, however, cooks quite as tender, and will average larger in size.

Our outlines have been made from medium-sized, or rather small specimens, but proportioned to the varieties. The distinctive marks and forms in calyx, cores, seeds, etc., are shown, and need not be written.

The Pear-shaped, fig. 100, is perhaps more commonly found in small gardens than any other variety, we suppose for the reason that many persons imagine quinces

all alike, their quality and appearance depending on soil, and so when fitting up a new home have procured a sprout or two from a neighbor free of cost. This variety is longer in form, and rarely colors as early or as brightly as either of the preceding. The calyx is set in a deep, narrow furrowed basin. The flesh is a deeper yellow than the Orange or Angers, but it is less tender, and unless very perfectly ripened does not cook tender. It is a good, upright grower, but not a good variety for one's own family use or profitable for market.

HYBRID FERNS—*ASPLENIUM*
EBENOIDES (f).

MUCH speculation has been indulged in recently, by those interested in the cultivation of ferns, upon the subject of obtaining hybrid ferns by proper manipulation, in plant houses. The question has also occupied eminent botanists, whether true hybridism occurs in this section of the vegetable kingdom? Opinions are divided on the subject, and as no veritable instance, well authenticated, has been presented of a hybrid fern, the question remains an open one. True, it has been stated by one cultivator, that he succeeded in obtaining hybrids, but on a close examination of the details of his operations, the fact is at least questionable. In an editorial article, the editor of the *London Gardeners' Chronicle*, T. Moore, a well-known authority in pteridology, reverts to the subject; he states that but two apparent cases have been communicated of hybrid ferns, and one of these refers to an American species of *Asplenium* found in this vicinity, and supposed to be a hybrid between the Walking Leaf (*Camptosorus*) and *Asplenium ebenenum*, as it was found in a locality densely inhabited by these two species, no other similar plant having ever been observed. On these data, and after a careful examination of specimens sent him, M. J. Berkeley, an authority in cryptogamic botany, and



FIG. 101.—*Asplenium ebenoides*.

secretary of the London Horticultural Society, concluded the plant was a hybrid. The late Sir Wm. J. Hooker, to whom he referred the matter, admitted the plant to be entirely unknown to him, and as it partook of the distinguishing characters of two species indicated, said "that if there were such things as hybrid ferns, this might be one."

Subsequently, Mr. Eaton, of Yale College, wrote to the effect that the plant known as *Asplenium ebenoides* (?) Scott) was not a hybrid, nor even a new species; with this conclusion, however, Mr. Moore did not agree, as he saw points of difference between it and the species to which Mr. Eaton desired to refer it. Now, it may seem strange that the fern in question was submitted to Mr. Eaton by Dr. Asa Gray, of Cambridge, long before it was sent to England; fronds from the individual plant were furnished him in 1863, and subsequently, but he was not acquainted with it; at least he referred it to *Asplenium pinna-*

tifidum, in which Dr. Gray did not concur. As the plant was published, without the consent of the discoverer, in a monthly horticultural journal, with a print furnished a friend, I hope it will not be supposed that he was anxious to have it recognized as a hybrid, or even as a new species, in opposition to such an authority as Mr. Eaton, who is admitted by the editor of the *Gardeners' Chronicle* to be "better able to judge of American ferns than any one else."

One thing is clear, however: no botanist who has ever seen the plant, or specimens from it, but has admitted it to be entirely distinct. With such authorities as Sir Wm. Hooker, M. J. Berkeley, Asa Gray, and many others, we are satisfied to let the identity of *Asplenium ebenoides* (?) rest where it is. One thing I will guarantee—there is no money in it. This variation is a very important illustration of Dr. Darwin's theory of the origin of species.

R. R. S., Philadelphia.

"A VERY POOR PRACTICE.—Under the head of 'Transplanting Evergreens,' the *Horticulturist* says:

"'Unless our trees are small and removed with balls, we practice heading back of all the limbs, and even the leader, full one half to two thirds of the growth. It matters not what the variety; all the evergreen family appear to bear this heading back without injury. In fact, in nine cases out of ten, the following year's growth more than compensates. It also helps to thicken up the tree.'

"Now, we have transplanted hundreds, yes, thousands of evergreens, varying in size from eight inches up to five feet in height, not one of which was removed with "balls" or "headed back" an inch. And in all our experience we can see no necessity for "heading back" an evergreen at the time of transplanting. It is true that "heading back" will thicken up the foliage;

but to pretend that such treatment at any time will in any way benefit the tree, is sheer nonsense."

[We differ with the editor of the *Iowa Homestead* in considering the heading-in of the branches of large evergreens on transplanting as a poor practice. Trees five to eight feet high we call *small* trees, and such we never head back; but we yearly superintend the removal of dozens of evergreens, fifteen to twenty-five feet high, well feathered to the ground. With such trees we find it impossible to remove a sufficiency of root to sustain the tree entire until new roots are formed, and hence we remove some of the foliage, thus reducing demand on the root; and having practiced both ways, and finding ourself from year to year more successful when we head-in large trees than when we do not, we doubt very much the correctness of the term "sheer nonsense" to the practice.—ED.]

ONTARIO PEAR.

FRUIT, medium size, globular obtuse pyriform; surface, rough in appearance; color, pale light greenish yellow thickly dotted with suffused green dots, and occasionally russet patches and a russet line half way from stem to apex; stem, medium length,

moderately stout, inserted without depression, but with a lip or ring at base; calyx, large, wide, and open, with long recurved segments; basin, moderately deep, round, smooth; flesh, yellowish white, slightly granulous, melting, juicy, sweet, and rich;

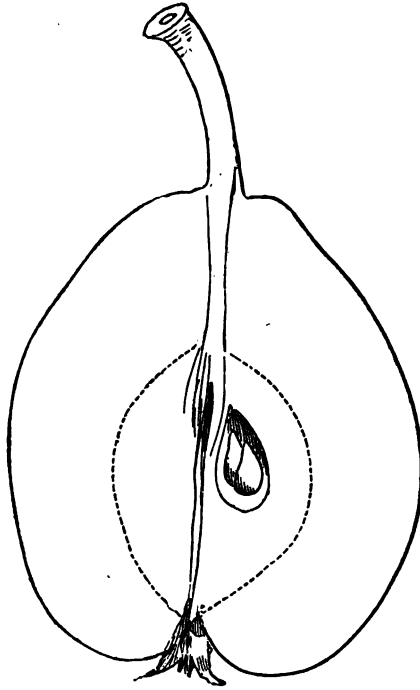


FIG. 102.—*Ontario Pear*.

core, surrounded by a deep yellow granulated line; seeds, broad oval pointed, dark yellow brown. Season, last of September.

The accompanying outline and description of the Ontario Pear have been made from specimens of the fruit received from

Messrs. Ellwanger & Barry, Rochester, N. Y., well and favorably known as good nurserymen and good judges of fruits. The tree is said to be an upright good grower, quite productive, and the fruit valuable as a market variety.

SQUASHES, APPLES, SWEET POTATOES, etc., require to be gathered carefully, with-

out bruising, then stored in a *dry, cool* place.

ORANGE CULTURE IN FLORIDA.

MR. EDITOR: Your note requesting my views on the above is at hand; but as your correspondent has so thoroughly ventilated the subject, I can add but little unless in corroboration of his statements. I may remark that, in complying with your request, I have no selfish ends to answer,—having no interest, directly or indirectly, in land in any Southern State. My first visit to Florida was made in 1844, and the last in July of this year.

Mr. Jacques states that “good high hammock land requires no preparation before planting except clearing and digging the holes.” I am aware that this is the course usually pursued in Florida; and that the trees grow and bear under such treatment. But if planters could be induced to properly prepare the land before planting, the yield would be increased, and the size and quality of the fruit improved. The orange is a hardy tree, and will annually furnish its harvest under treatment which would destroy an apple or pear tree. The trees are badly planted, and are allowed to “go it alone.”

I am convinced that your correspondent’s “facts and figures” will be severely criticised by those who have been in the habit of pocketing a small yearly income from the culture of fruit, vegetables, or grain.

During the month of January, 1865, I carefully examined a grove of about 800 trees—one that had received no care or culture for four years. A large number of oranges had been gathered and sold, yet my estimate of the remaining portion of the crop was 1,500 per tree; number of trees to the acre 130; valued at \$25 per 1,000, \$4,875 per acre. In July last I examined another grove, planted about nine years; the trees were planted very close, say 200 to the acre. My estimate was 1,500 fruit per tree; and if the owner can realize but \$20 per 1,000 for his fruit, he

will receive \$6,000 as the product of one acre. Reduce the price to half a cent per orange, and the result would be \$1,500 per acre,—a profitable investment when compared with strawberry or grape growing.

Mr. Jacques refers to stocks, and I fully agree with him that the wild orange stock offers the quickest return; but I am convinced that the orange is more luxuriant in growth, and the fruit is larger, if budded on the lemon stock. This, I admit, is a tedious process of raising a grove, but one that deserves the attention of the settler. The day will come when nursery-grown oranges will be in demand, more especially if the grower is careful in selecting superior varieties for the purposes of propagation. With regard to durability, the lemon stock is objectionable. It is the received opinion on the Continent, that the orange, budded on the orange, will last for 300 years, but on the lemon only 100. But even if worked on the lemon, a man can plant a grove for the benefit of his children. During a recent visit to Florida, I instituted inquiry relative to the price of stocks, etc., and was informed that parties would contract to supply the stocks, plant them, and, at the proper season, bud them, at 50 cents per stock.

Mr. Jacques remarks that “Florida oranges are the best in the world;” and I am convinced that some of your readers who are not posted will exclaim that “such a statement is all bosh.” Now, sir, Mr. Al Fresco claims to know a good fruit from a bad one; and as he has eaten oranges grown on the Continent, Azores, West Indies, Australia, and Pacific islands, he contends that he is in a position to compare; and he has no hesitation in asserting that he never found any to equal those of poor neglected Florida. The climate of Florida seems peculiarly adapted to this fruit—developing to the greatest

extent all its good qualities; but what is wanted is some enterprising person to introduce the Navel orange. This variety is the largest of the family, seedless, juicy, productive, and carries well. When some one cultivates this variety in Florida, where it can attain perfection, and forward to the New York market some of its fruit, then, and only then, will our Rip Van Winkle fruit culturists awake to the advantages of our favored neighbor. Some years since, at one of the British consulates in tropical America, twenty-seven varieties of fruit appeared at the dessert; and the host requested the opinions of his guests regarding the best fruit on the table, and all decided in favor of the Navel orange.

The climate of Florida seems to possess every requisite to develop all the individuals of the citrus family. The lime grows to perfection; and the citron grows to greater perfection than on the Continent. During a recent visit to Florida we were presented with a "small citron" weighing three pounds, and were assured that "some of the same crop, from the same tree, weighed eight pounds." I was positively assured by a gentleman in St. Augustine, that his crop of lemons from "one tree, about fourteen years old, sold for over \$100"—the fruit were sold to visitors as curiosities. The gentlemen pointed out three "small lemons," which he informed me were "the last and the smallest of the crop," and kindly presented me with the largest of the three. Upon measuring it I found it to be five and one half inches in length and eleven inches in circumference.

Very inferior oranges are to be found in many of the groves; and this fact is readily accounted for from the fact that many of the trees are seedlings, and in some cases no care was exercised in selecting buds from best varieties. In certain portions of Florida, and, if my information be correct, mainly in the neighborhood of Mandarin, the fruit of the orange is subject to a vegetable fungus or parasite,

which leaves a dark stain upon one side of the fruit.

Some will assert that orange culture will soon be overdone and "fizzle out," like strawberry and grape growing. This will not occur for a lengthened period, if at all. Strawberries, grapes, pears, apples, and such fruits, can be raised over a vast extent of country, but the culture of the orange must, of necessity, be confined to a comparatively limited area. Our population is rapidly increasing, and new markets are being constantly opened up by railroad extension. Why in the name of common sense send our spare change abroad for oranges, lemons, limes, and citrons when we have the climate and soil to produce them in greater perfection than the imported?

During a recent visit to Florida we found the date, papaya (*Oarica papaya*?), guava, and banana growing freely, and producing abundance of fruit. We have reason to believe that the tea plant would prove a success on the heavy soils and hilly lands about Tallahassee. For our supply of pine-apples we are mainly dependent upon the Bahama Islands, and we annually, for this fruit, place in cousin Johnny Bull's pocket thousands in gold. Yet, strange as it may seem, in some portions of Florida we have the soil and climate to produce pine-apples in the greatest perfection. In the English colony of Natal, with a climate approaching that of Florida, the culture of coffee has succeeded; and, I may ask, why not test it in Florida? From observation, and data derived from reading, and conversation with reliable persons, I have reason to believe that the following list of productions will prove successful in Florida: Cocoa, almonds, olive, vine, pine-apple, plantain, yam, arrow-root, jalap, rhubarb, ginger, cinnamon, cayenne pepper, senna, madder, opium poppy, cloves, black pepper, nutmeg. It would be useless to refer to the quality and productiveness of the cotton and sugar in Florida. With the diversity

of climate, productiveness of the soil, and frequency of rain during the summer months, the only question is, what tropical production will not prove a success in Florida?

During the summer of '85 I traveled over nearly every portion of the South, east of the Ohio and Alabama rivers, with the exception of Florida, and found disease existing among grapevines to a great extent. The Scuppernong alone seemed to be exempt; and with this exception, I concluded that the grape would prove a failure in the South. During a recent visit to Florida my attention was more particularly directed to the grapevine; and after carefully examining a large number of vines of different varieties, I could not detect a trace of disease, except in one place, where I found the fruit had rotted. This condition was accounted for when I ascertained that water could be obtained by sinking a hole twenty inches deep. What surprised me most was to find that "hardy as an oak" grape, the Delaware, growing freely in a light soil, and presenting no trace of disease. From my limited observation I have reason to believe that the grape will prove a success in eastern Florida; and that lands worth one dollar and twenty-five cents per acre will eventually be clothed with vineyards. Some of your readers will state that it is strange that the vine has not been tested; but they must recollect that sugar-cane and cotton have always been productive crops since Florida was ceded to the United States. And, according to Vignolles, "it is a well-known fact that in west Florida the French Government ordered a suppression of the vineyards lest their success might injure those in France; and we learn that similar restrictions, as to the olive, and perhaps the grape, were imposed by the Spaniards over the Florida colonies. Although these decrees are ancient, and have, perhaps, long become dead letters, yet they must have prevented the spirit of enterprise that in the first instance sug-

gested such enterprises, which, once quenched, were not easily revived."—*Vignolles' Florida*, New York, 1823, p. 98.

The climate of eastern Florida is unequalled. The winters are dry, warm, and enjoyable; during the summer months rain is ample, and the range of the thermometer is never so high as in the Northern States. Although the mean at Pilatka is 80° for June, 81° for July, 80° for August, and 78° for September, yet the thermometer seldom rises above 90°, and a pleasant sea or land breeze is nearly constant. In our Northern States the thermometer frequently rises during the summer months to 95°, and sometimes to 100°. The monthly extremes of temperature at Fort Columbus (New York city), for thirty-two years was as follows: June, 89°; July, 93°; and August, 89°. At Key West, Florida, for twenty-three years, the monthly extremes ranged as follows: June, 88°; July, 89°; August, 89°. I have selected Key West from the fact that it is warmer during the summer months than any portion of Florida east of the St. John's River. During the heated term of last summer I left New York on the 4th of July to escape the intense heat of our mid-summer, and enjoyed a pleasant sea breeze at St. Augustine, with a mid-day range of the thermometer of from 80° to 84° of Fahr. scale.

Many suppose that the South is unhealthy, and more particularly Florida, because yellow fever sometimes prevails at Key West and Pensacola. The intending settler need not select a home within the limited area where yellow fever is an annual visitor. There are certain localities where fever and ague prevails, as it does in the neighborhood of New York city; but this is no reason why such localities should be selected. From observation, and facts derived from statistics and reliable persons, I am convinced that a man is more likely to enjoy health in Florida than in the Northern States.

During a recent visit to Washington I was favored with an interview with the

Commissioners of Agriculture and Land, and arrived at the conclusion that these departments possess but little positive knowledge regarding eastern Florida. It seems to us that if the Hon. the Commissioner of Agriculture were to select some competent person to examine and report upon the climate and productions of Florida, that it would prove a profitable investment to Uncle Sam. If an individual were selected who could adapt himself to the habits of the people, and throw his opinions and prejudices overboard for the nonce—one who has a knowledge of horticulture and pomology, as well as kindred subjects—a mass of valuable information could be collected that would, if published in the Report of the Department of Agriculture, benefit our country. The adoption of such a course would direct the attention of our people to the advantages of Florida, as well as the population of the fruit-growing regions of the Continent, who entertain the opinion that the whole United States is merely a hyperborean region. It seems to us that such a course would bene-

fit more than the publication of lengthy articles on the older States.

Some persons visit Florida and form an opinion of the whole State after examining but a limited portion. One of our leading agricultural correspondents passed from St. Augustine to Picolata by stage, over the worst portion of the State, and condemned everything in unmeasured terms. What is wanted is some unprejudiced and competent person to examine eastern Florida, and tell a plain, unvarnished tale.

To avoid letters to answer, and other objectionable features in connection with a published name, I must sail under false colors; but may remark, that if any of your readers desire further information regarding Florida, you can inform them where I can be found, and that I shall be happy to tell all I know of this great fruit-growing region. It is more than probable that I shall visit Florida at an early day; and if I do I shall only be too happy to furnish some facts and figures regarding orange and grape culture there. AL FRESCO.

THE WHORTLEBERRY.

THE whortleberry, or huckleberry as commonly called, like the blackberry, is fast passing away from among us as a wild fruit; and unless some exertions are made toward its cultivation, not many years can pass ere the fruit will become a rarity in any section, and entirely unknown where perhaps now it is abundant. Although a native wild fruit, yet it has ever been confined to certain limits and sections of the country, and as soon as those sections are cleared up and cultivated, the whortleberry disappears; while it is yet to be had in some sections for the picking, its value in the New York and other city markets is such that we feel assured it would prove a more remunerative crop than strawberries; and once a plantation of it is made, it is

permanent, and will require but little care annually to continue it. The past season the fruit has sold as high as eleven dollars a bushel, and not below five dollars, to our knowledge. In productiveness it is surpassed by no plant or fruit producing shrub, we having often gathered a quart from a single bush, which if allowed as a rule, and we consider an acre planted with bushes, at a distance of one by three feet, would give about three hundred and eighty bushels, that, counted at the lowest price—five dollars—would amount to nineteen hundred dollars. But we consider this a fancy estimate, and only produce it to show how the matter can be figured up. Let us take a more moderate view, and putting the crop at half a pint to a plant—certainly

a safe estimate—and we have then ninety-five bushels to the acre, which at five dollars would give over four hundred dollars to the acre, an amount beyond the average of the berry crop generally.

Thus showing its value when produced, we have next to take the soil, cultivation, etc., required to produce it. In its wild condition it is found in almost all soils, from a poor, hard, thin clay, running through all the grades of sand and loam, to a deep, rich, but wet, swamp muck, so that we can have little doubt of success,

plant it where we may. In its varieties, it is found wild in shade and in open bleak exposures, so that here again we have reason to look for success in almost any location; but whether it will bear cultivation of the soil, or require the surface to be kept in turf or mulched, as it is found wild, is a point yet to be proven by practice; but that it can be grown as a crop, and profitably, we have not a doubt, and trust the subject will be so brought before our nation by some energetic person as to induce general attention and soon extensive planting.

GRASS *VERSUS* CULTIVATION FOR ORCHARDS.

THE practice of permitting the grass to grow and form a sod on the surface of the ground devoted to orcharding is advocated by some quite intelligent writers; while others, equally as intelligent and of long experience, oppose it, and maintain that in order to have good, fair, and well-grown fruit, it is necessary to keep the surface of the ground loose and free from any exhausting crop. Both are undoubtedly correct, in part, for we have seen orchards that while yearly cultivated produced fine and perfect fruit, but as soon, or within three years of after being left in grass, the fruit became knotty and imperfect; and again after cultivation produced fair and perfect crops. Again: we have seen *old* orchards in many States that have had no cultivation for years, and yet produce crops of fair and handsome fruit. We know cherry-trees that have had nothing but turf beneath their branches for many years, and yet their fruit is annually fair and good. And, again, we know of cherry-trees that were kept cultivated ten or more years, and then gave yearly beautiful fruit, but afterward neglected and left in turf, the grass not even mowed; since then they have not for several years produced fruit equal to former seasons or up to the same grown on trees of like varieties well

cultivated not a half mile distant. "One swallow does not make a summer," nor does one man's success in growing a crop in a certain manner entail any certainty that that is the best way. That deep cultivation, with a plow going near to the bodies of the trees and breaking the roots yearly around the crown, and six to eight inches deep, occasions injury and may be counted as a bad practice, we have no doubt; but that a young or bearing orchard is the better for being let alone and the grass permitted to grow, rather than have the soil annually stirred and kept loose, free to the action of air, heat, and moisture at a depth of three to four inches, we do not yet believe. There is undoubtedly a medium desirable: too deep and too frequent stirring of the soil or too late in the season would unquestionably be detrimental; but if a young or bearing orchard has the surface soil to a depth of three inches well cultivated in all the growing portion of the year, we have not a doubt that nine times out of ten it would present a more healthy appearance, and give better fruit than one left in sod, even if all the grass be left to decay upon the spot where it grew. Certain deep rich soils there undoubtedly are which have in them a superabundant food for vigor-

ous and rapid growth of trees planted therein for many years; but these are the exception rather than the rule in all our best fruit-growing sections. Locations of this sort on the prairies, and in rich valley bottoms, are to be found; but they are not generally counted as most to be valued for fruit-growing; and to prepare orchard ground by a first thorough deep trenching and enriching, if thought necessary to success, would check progress in orcharding to an extent that where now there are hundreds, there would not be ten acres planted yearly. We are decidedly in favor of progress, and if we could believe that neglect would grow young orchards and produce equally good fruit as judicious, careful, intelligent cultivation, we should advocate it most heartily, on account of labor-sav-

ing, which is a heavy item in the way of getting an orchard into, and keeping it in, a healthy, vigorous condition; but at present we are not sufficiently advanced to do other than advise every owner of a young orchard to keep the surface of the ground stirred annually in the early part of the summer to a depth of three or four inches, repeating the stirring up to August, as often as the ground appears hard or packed by heavy rains; and especially do we advise all owners of young orchards to keep all grass or litter from around the bodies of or near to the trees during the winter season because of probable depredations from mice that may harbor therein, and in time of heavy snows obtain their food from the bark of the young trees.

NUT GROWING.

It is somewhat surprising that with all our nation's love of gain, and the general appreciative admiration of beautiful trees for shade and ornament, we have so few instances where nut-bearing trees have been adopted for planting in place of the maple, elm, or linden. The chestnut, butternut, black walnut, and Madeira nut, where the climate will admit, are all beautiful as shade ornamental trees; can be transplanted while young without a loss of over ten per cent.; grow very rapidly, and come into bearing usually from the seventh to the tenth year from seed. The hickory or white walnut is more difficult of transplanting; but even that we have removed with success by digging deep and obtaining, and again replanting entire, the tap root. This tap root retaining is, in fact, a feature of importance with all the nut-bearing trees, its loss often resulting in death of the tree, while, if fully retained, a tree rarely dies. It is, however, more certain, and probably most economical, to plant the nuts where trees are designed to stand.

This may be done and the ground yearly cropped to corn, potatoes, or small fruits, and at the end of five years or so it may be left in grass if desired. As a paying productive crop, as a permanent investment, attended with little or no labor in the cultivation or pruning, etc., we know of nothing more reliable than that of an orchard of nut-bearing trees. Our native forest trees are being rapidly destroyed, and without the attention of horticulturists to the subject of growing nut-bearing, as well as apple and pear trees, we shall soon find the products of our native land, in this particular, more rare than that of foreign shores. Already the chestnut commands a ready sale at from eight to twelve dollars a bushel, while the white walnut sells freely at from two to three dollars; and yearly as time rolls on, these prices are enhanced rather than reduced, because of the increased demand and the lessened product by reason of cutting away the native forest trees. We write this having just come from an orchard of about sixty trees,

now about twenty-five years old, and from which the owner last year gathered an average of over one and a half bushels to the tree, paying him a net return, exclusive of labor of gathering, of over six hundred dollars. These trees stand in pasture land, and when the owner was clearing up the forest, were young saplings and left to grow, with a hopeful looking forward to the pres-

ent result. In our earlier days we spent many a day gathering the white walnut, and our recollection is of six to eight bushels of fruit to a tree, for which buyers then paid one dollar a bushel; and as the trees were in pasture land, the product was a clear net gain, extremely acceptable to the owner.

JACKMAN'S CLEMATISES.

AMONG the returns that have been made as to the effect of the late drought on particular plants, the value of these new hardy clematises as additions to our summer budding plants must not be overlooked. As Mr. Fleming, of Cliveden, has well observed, "they have in their several varieties the very colors of which our summer flower-gardens are in a great measure deficient;" and these colors are presented not only in what may be termed huge masses, but also with a richness so far beyond any other bedding plant yielding the same hue of color, or even an approach to it, that any comparison between them would be as incongruous as one instituted between Mr. Thomson's new grape and the ordinary white currant.

But have these clematises successfully stood the test of the hot, fierce summer sun and the prolonged drought? This is the point of interest for bedders-out. To this it can be replied, that scarcely any position could be said to afford so good a test of their fitness in this respect as the flower-garden in front of Mr. Jackman's residence at the Woking Nursery. A free sandy soil would be thought to be one specially open to the hostile action of the drought; while the position of the beds admitted of scarcely any shelter to its occupants from the scorching tropical heat of the unclouded sun; and yet nothing could be healthier-looking than the foliage of the plants, and rarely anything in its

way more magnificent than the immense array of flowers the beds presented, tinted with rich violet, purple, and mauve lines, that fairly glistened with and reflected a beauty quite of a new order and degree in the flower-garden.

One large bed on the left of the dwelling-house as it is approached from the carriage drive, and of a kind of elongated kidney shape, and a corresponding bed on the other side of the garden, of a somewhat similar design, were planted with seedling clematises from the same batch out of which C. Jackmanni and others were selected. They were all good, and generally partook of the color of the variety just named, there being, however, slight differences in the hues, as some were paler than the others—just enough to impart to the beds a lively appearance, yet without interfering with the coherence of the mass of coloring produced.

Two things about these beds were noticeable: the one, the symmetrical growth of the plants, rising up in an aggregate elevation of evenness to the height of some twelve or fifteen inches; and, secondly, in this emerald couch seemed to recline a glorious mass of color, presenting an almost unbroken appearance, and yet without any trace of formality. These plants had had the advantage of some three or four years' growth, so the roots were strong and the vines stout; yet such is the rapid growth that these hardy clematises make, that a

single plant will soon cover a surprising surface, either of a bed, or wall, or trellis. Hard pruning is a process these clematises may be said to "delight in," and so in November all the wood is cut away to within six or eight inches of the roots, and this causes them to break away very strongly in the ensuing spring. Good living is another delight, and so, soon after pruning, a thorough dressing of rich, well-rotted manure is forked in between the plants—in fact, it would not be too much to say that they are gross feeders, and can take a good share of very strong nutriment. Mr. Jackman, who has now the experience of a few years to guide him, recommends giving them very liberal treatment in this respect. The plants thus cut back in November make early growth, and put forth their leaves as early almost as the hardiest shrub that hastens to greet the spring. Nor is any covering absolutely required during the hardest and sternest winter; the utmost hardihood appears to be their inheritance, a recommendation of no mean order. The growing shoots should be pegged down, both to preserve a good outline to the bed, and to prevent the vines from being disturbed by the wind. The habit of the plants themselves tends to further a symmetrical arrangement of growth, as the laterals are actually blooming wood, and do not take the form of wood-producing shoots.

The beds are edged with some perennial variegated plant generally, though annuals could be employed, if required. Of these perennial plants such things as *Lonicera aureo-reticulata*, *Stachys lanata*, *Vinca elegantissima*, and the showy *Salvia argentea*, are used with the best effect. These variegated plants form a nice contrast to the mass of green foliage, or the subsequent addition of the brilliant layer of coloring; and perhaps of the kinds named the *Lonicera* and the *Stachys* are the best.

But, it will be asked, do these clematises bloom successionally? They do so in a remarkable degree, and if an inducement

were occasionally applied during the summer in the form of some manure water, there is no doubt but that the plants would gratefully repay the application of such a generous regimen. A copious watering occasionally during dry weather would by no means be strength spent for naught, but it should be a thorough saturation of the roots. Even in a dry summer like the present these grand beds appeared to be indifferent to the drought, seeing that a mass of green foliage effectually screened the roots from the direct action of the sun, and kept the soil about them nice and cool, while it acted as a check on excessive evaporation.

A certain mode of obtaining a succession of bloom has been tried by Mr. Jackman with marked success; and it is well worthy of notice, especially by those who bed-out on a large scale. The plants that are pruned back in November may be said to bloom by the 1st of July in ordinary seasons, though in the case of the present summer the plants so pruned were in bloom fully three weeks earlier. If, instead of pruning in November, it be done in April, a postponement of the blooming season, so to speak, would be secured, and the plants should begin to bloom early in August, and this without any perceptible loss of vigor, or otherwise, by the retardation of the flowering period.

Some other beds also challenged attention; and of these two were of a long oval shape, and were planted with *C. rubro-violacea*, edged with *Lonicera aureo-reticulata*. The plants of this variety of the clematis having only been planted in the preceding autumn, were necessarily not so strong as in the case of the seedling plants before mentioned; but there was yet quite enough of bloom to show up with fine effect the striking reddish violet hue that pervades the flowers of this variety. The *Lonicera* was remarkably good; indeed, there is nothing like a dry summer to bring out the especial fitness of this plant to decorate the flower-garden; and in this

particular relation it contrasted admirably with the mass of color it surrounded. Two other corresponding beds of the form of the segment of a circle were planted with *C. Jackmanni*, edged with *Euonymus radicans foliis variegatis*; this arrangement, too, was very good indeed: and it is no doubt true that of all the new hybrid clematises Messrs. Jackman & Son have sent out, *C. Jackmanni* gives the best and most enduring body of color. Two small oval beds had as their occupants *C. lanuginosa candida*, edged with *Vinca elegantissima*. Perhaps in the case of this variety the drought was too severe, the want of the vigorous constitution and free-growing habit of the new varieties deprived it of the power of contending against the opposing elements of heat and drought. The present season must not, therefore, be taken as conclusive against the fitness of this fine variety for bedding purposes; if it were to succeed well, it would give a grand contribution of white to the flower-garden, supposing that freedom and continuity of bloom could be had from it.

The planting of these clematises, in whatsoever way they may be used (and there are several other ways in which they may be grown most effectually), can be done from September to April. At the

time of planting, the soil should be freely manured; old, thoroughly rotted and well-seasoned manure should be used, and some leaf-mold, and, if near at hand, some calcareous soil will be found very beneficial. Prune back hard in November in each year to within four to six inches of the surface of the soil, and when this is done the plants should be mulched with good manure, which should be allowed to lie on the surface till the end of February, and then be forked in about the roots. To sum up, it has been well said that "to develop the beauties of these new varieties to the utmost, a light rich soil is requisite. A warm position is better than a cold one, yet relative climate is not of such great importance as full exposure to sunshine, and a tolerably dry sub-soil. Every kind of clematis is at home on chalk, and probably in many gardens on the chalk, where some favorite bedders make but a poor figure; these plants would prove of great value if assisted with good manure and leaf-mold to give them a fair start in the first instance. Their brilliant shades of maroon, purple, and violet can not be equaled by any other race of bedding plants; and wherever and whenever they are seen they will be renowned and remembered."—*Gardeners' Chronicle*.

STATE AND HORTICULTURAL FAIRS.

A MORE than usual success has attended the various State and local Horticultural Fairs this autumn. The attendance of people has been large, and the exhibitions in every branch of agriculture, horticulture, and mechanic arts greater than ever before.

The Cincinnati Horticultural Society prepared an immense room in a most elaborate and tasteful manner, studding the floor and tables completely with plants, fruits, and flowers. The advertised award of the Longworth Wine-House's premium for the best wine-grape of the United States

drew a large number of leading horticulturists, expecting to see competition by many sorts, and also expectant of seeing there all the new varieties of promise; but in this they were partially disappointed, the display of new sorts being quite meagre. The Longworth award was given to the Ives as the best wine-grape for all our States—a judgment that may possibly prove true, but at this time has many opponents, and justly too, inasmuch as the grape, although an old sort in one or two vineyards about Cincinnati, has been by vine-growers

in that locality but slightly esteemed until within a year or two, and tested in very, very few locations in that or other States. Of other fruits than grapes, the exhibition was fair, and as usual exhibited fruits grown with care, side by side with those uncared for in cultivation—the one luscious, tempting; the other, of the same variety, almost repulsive in appearance. A few seedling pears were shown, but nothing of good promise, and no new apple of value.

The Ohio State Fair had one of the finest shows of fruits ever made, especially in grapes, a leading fruit just now in the north part of the State. Of these, however, nothing new of value appeared, but the size and ripeness of some of the older varieties astonished many. Iona alongside of Catawba was classed as *almost* as good, while the Concord exhibited a sweet richness that would carry the must certainly up to 80°. Mottled was shown in its true character, and so good as to awaken a lively interest in this old, really valuable, but little appreciated grape. The show of apples and pears was unusually fine, evidence of the admirable fruit section as well as of the good cultivators surrounding the city of Toledo, where the fair was held.

The State Horticultural Show of Iowa, notwithstanding the deficiency in the apple crop there this season, was yet up to any former one, and the fruit, as a whole, gave evidence of good cultivation and a better knowledge of sorts adapted to their climate than some of the shows in former years. There is no question about Iowa being a good fruit State, as the show of apples, pears, and grapes at this show would convince any doubter. Even chestnuts were on the table, grown domestically, as we may say, by Suel Foster, an enthusiastic fruit-grower of that State.

At the Michigan State Fair the show of fruit was not large, but in the collections were many beautiful specimens of well-proven varieties. Michigan has a great deal of good fruit land, and the show of such products should have been far greater.

Of vegetables, the *Western Rural* says:

"The Michigan Agricultural College made a very fine display of solanaceous productions, consisting of potatoes, vegetable eggs, peppers, etc. The specimens were in excellent condition, and being very well arranged, attracted much attention. There were 36 varieties of the tomato. That which is known as the College Tomato No. 1 is said to have done best this year, and next to this, College No. 2, which is a hybrid between College No. 1 and the Tilden. It is as large as No. 1, but a little later. College No. 3 is smaller than either of the foregoing, but is very solid, grows in large clusters, and is well adapted for pickling. Keyes' Tomato did not ripen as early, or turn out as well in any way as the College No. 1.

"Of potatoes there were exhibited by the Agricultural College 56 varieties, with the acreable produce of each noted on the cards. The Early Handsworth came to maturity earliest of all, but did not yield as well as several others. The Early Rose is said to have supported its high character."

The shows of grapes at the Wisconsin and Minnesota State Fairs indicate success in growing all the early ripening, hardy varieties, such as Delaware, Hartford, Concord, etc., and the displays of apples evidence in the number of seedling crabs shown, that many portions of the States must largely depend upon improved varieties of that class for their main crops of winter fruit. There is one point of encouragement, however, for all the Northwestern orchardists, and that is in the less number of insect enemies they have to contend with, thus insuring more fair and beautiful specimens of fruit than can be grown in milder latitudes, even with great care. The move now making toward originating a class of apples belonging to the crabs is a good one, but if they will select their best crab and then fertilize with some of the best Russian varieties, the progress will be more rapid than to continue reproducing crabs, even if seeds of the best are selected.

MIXING UP.

THE thought has often crossed our mind—"Does the human race progress as a whole?" We suppose the voice from the aggregate would be in the affirmative; and as examples in proof, reference would be made to the telegraph, the steam-engine, and a host of other inventions, not forgetting the improved weapons of death, for the quicker and sharper man can slay his fellow-man, so it also shows the *progressive* intellectual condition of man, brave, noble man. But let us come nearer home and talk of horticulture, that solacing occupation that tames the savage, attracts the would-be assassin in wonder from his evil pursuits, and makes the warrior, not a slayer of his brother Abel, but an energetic tiller of the ground, and all men better men who study nature and God in and through His works. We would that horticulture were progressive from its noble founder Adam to the present moment; but we are at the same time sorry to say that we think otherwise; for where there is advancement, it is rarely found among those who labor in it for a living and claim it as their profession. We mean gardeners. There are but few who read; few who ever subscribe to a horticultural magazine; few that are observing; and scarcely one in a hundred who knows anything of vegetable physiology, and to whom botany is a dead language, and the operations of their occupation are mechanical. Almost in every instance where we find a horticultural journal, it is on the tables of the gardener's employer. This is proper enough; but it certainly should be in the hands of every man claiming to be a gardener. There are very honorable exceptions to the statement made, and we say respectfully to such, that they have a weighty duty to perform, and that is, the advancement of all others where they see it is needed. No man need

feel that by imparting knowledge to another that such will be injurious to himself, for the very opposite will be the result. Every finely laid-out place, every properly regulated garden we see, with all its fruit-trees correctly named, will impress this order of things on the mind and taste of the employer, and hence his unwillingness ever to permit anything different. This makes good situations and creates the desire for good, neat, clean, practical, clever gardeners. It was only the other day that we were called into a gentleman's grounds to advise in matters relating to its fruit culture, and it is only one instance among many that come under our observation. Money appeared to us to have been spent liberally; but, said this gentleman, "I am utterly dissatisfied with this *comfortless* state of things. Here I have in this garden some five or six hundred pear-trees, and don't know the name of one of them! There is four hundred feet of a grapery, and the fruit (the majority) is so poor, colorless, and watery that I am ashamed to place it on my table for dessert when I have company; and another thing is, I can not, under the circumstances, take any gentleman through these houses. And I have come to the conclusion, that if I can not have better results than is manifested here at the present time, I will pull the whole thing down and discontinue its use, for I am determined not to be annoyed with it." "Has not your gardener suggested some alterations, sir, which have not been yet effected, and which would produce the proper requirements if done?" "We will take a walk through the houses, and I will introduce you to the gardener." "Your Hamburgs appear to color poorly," was our remark. "Yes, sir; you see the Hamburgs, and Muscats, with other sorts, are planted *mixed up*, and they never *do* this way for any length of time, for after a

while they will *mix up*." This to us was new in the science of morphology; we noted the hint and walked on. This is no over-colored picture, reader, but as near as our memory serves us, the *verbatim* of that spoken.

Neither are such erroneous ideas confined to those practicing horticulture, for we notice a correspondent in the *Farmers' Chronicle*, by the name of G. S. Innis, discussing the question whether potatoes will *mix up*, and gives several cases of his own experience, where he planted pure Neshannocks and pure Pinkeyes in the same hill and grew them together, and lo! they turned out true (the potatoes) to their kind, and continued so for ever after! "But white corn and yellow corn will 'mix up,' and why not potatoes and grapevines?" When we find the *stalks* of white and red corn "mixing up," then we may rely upon it that every other plant and tree grown will "mix up;" till then, however, things will go on as they now are, which is the "mixing up" of seeds (in some cases) the plant produces. Let it be understood as a fact or law in nature, that no hybridizing or artificial fecundation ever effects any change in, or on, the organization of the plant so fecundated, but in the *seed* of the plant so fertilized. Hence corn becomes "mixed up" when white and red are

grown together, and also in the case of the potato in question; if the Neshannocks and Pinkeyes were planted in the same hill and produced flowers, and the one variety became naturally fecundated by the other, a "mixing up" would be the result. This would be in the seeds; but in order to positively know that a "mixing up" had been effected, the seeds produced must be sown, when the young progeny would at once determine the fact of a cross being effected by the appearance of the potatoes the plants produce. But no change could possibly take place in the two original potato tubers placed in the hill, any more than there could be a change or "mixing up" of two varieties of apple-trees growing side by side in an orchard, or two varieties of grapevines growing side by side in a vinery or vineyard.

When we see intelligent men discussing such points in our agricultural papers on the subject of "mixing up" two tubers of potatoes by planting together in a hill and allowing them to grow together, to see if that will effect a change of *variety* in them another season, it does not seem to augur the rapid progress of our art as we would wish it, but *per contra*, especially when editors seem to enjoy with innocent zest the ludicrous experiment of things "MIXED UP."

JOHN ELLIS.

BEAN POLES, OR NO BEAN POLES.—Like many other old practices, almost every one who grows a variety of the running or vining bean, sets poles from eight to twelve feet high upon which to train them. One of our correspondents writes us that last year, from want of time to do the work, he neglected this part of pole-bean growing, and realizing so well from his neglect, he this year followed it up. This year, however, he spread a little coarse apple-tree brush along the ground, and over that, just a little raised from the ground, grew the

bean vines, producing him a crop fully equal to any he ever obtained from the best of care in training to poles. He argues that, "the shade given by the vine when trailing over the brush is a great advantage in keeping the earth moist and at an even temperature;" and that, "the effect of strong winds is also much less injurious to the vines." We hope further experiments will be made in the coming year—for if this brushing is equally as good as the poles, certainly considerable expense is saved in the crop.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

MR. EDITOR: A friend of the writer, who is beginning to take a lively interest in poultry-growing, propounds the following questions, and desires answers thereto:

1st. "What months are considered most favorable for having young chickens hatched out?"

2d. "What kind of food is best for promoting their rapid growth?"

In answer to the first interrogatory I have to say that for this latitude, and with the necessary facilities for protecting the young broods against the storms and inclemencies incident to the season, I esteem the months of March and April as the best for having them come forward; while in regions farther south I should prefer to have them hatched out at least a month earlier. Now, this preference for early hatching is predicated, in part, upon the supposition that somebody will look after the welfare of the young birds, and not allow them to be given over entirely to the mother's care. Where they are to be abandoned entirely to their mother, and to struggle and scratch their way up as best they may be able, I think the better plan will be to allow the hens themselves to determine the times and seasons when they will bring forth their broods. Chickens hatched in the early spring, where properly protected and tended, are generally more vigorous and healthy, grow more rapidly through the summer months, and make larger fowls than those arriving in later portions of the breeding season. And, furthermore, pullets which come in the early spring are so well matured that they will commence laying in the

ensuing fall, and lay through the winter, if they are duly fed and protected. From my own observation I am satisfied that chickens coming in the early spring are less liable to that pestiferous affection called *gapes* (a disease which destroys thousands annually, and which is caused by a little red and thread-like worm which is supposed to be produced through the spring rains or night dews, and finds its way, through the food or drink of the young chick, into its windpipe, and there remains and feeds till the lungs of the little bird are perforated and life is destroyed), than those which come at a later period, when the chilly night-dews hang heavy upon the rank grass, and the genial sunshine of May unbars the prison doors of that insect-world, which, evoked from its long torpor, is vitalized into an active ministry of evil as well as of good.

In this immediate connection it may not be inappropriate to give the results of an effort to raise summer-hatched chickens during the current year. Notwithstanding the writer had doubts as to the result of the experiment, doubts created as well from his own past experience as the testimony of others, he nevertheless procured and put into the charge of an intelligent and careful farmer, early in the month of June last, a lot of vigorous and superior young hens and a cock of one of the most popular breeds. Early in the month of July broods of chicks, ranging in number from nine to fourteen, began to come forth from the eggs of these fowls. Though vigorous and sprightly when first taken from the nests, in the course of ten days or a fortnight

these chicks began to droop and grow feeble and finally perish, one or two a day, until the most of them had disappeared. This result brought vividly to mind the statement of an English editor, who, in replying to a correspondent who questioned him as to the cause of the fatality among his summer broods, said that while he was unable to explain the cause or to relieve his embarrassment, there was a generally prevalent opinion among English henwives that "The chicks which are hatched when there's making of hay
Are not apt to thrive, but to perish away."

In answer to my friend's second question I have to remark, that I esteem bread crumbs (Indian meal, mixed simply with water and cooked either in an oven or in the embers of a wood fire, and then crumbled up), wheat, broken rice, and cracked Indian corn as the best food for chicks when first taken from the nest. English poultry-growers use oat and barley meal extensively, but never having tried it, I am unprepared to speak of its merits. Cooked food is more nutritious and more digestible than if fed in its raw state, and where convenient should be used. As the chickens increase in size, add cooked fresh meat, chopped fine, three or four times a week, and be certain to allow them the widest possible range, when the weather is favorable, where they can have unobstructed access to grass, and scratch among the leaves for bugs, worms, and insects. The more you can induce your young birds to eat, the more rapid will be their growth and development. Both *variety* and *exercise* are needful to make your chicks heavy feeders and vigorous in health. And be sure to see that they have free access to fresh water whenever they wish it. Fowls that are delicate feeders can not be fattened rapidly. Now, bear in mind that the above suggestions are made mainly in reference to young fowls. If adult fowls were fed in the liberal manner indicated, many of them would soon grow too fat for the requirements of the egg basket or the purposes of maternity.

E.

THE VINELAND AGRICULTURAL AND HORTICULTURAL FAIR. — Vineland was founded seven years ago. It is now a place of twelve thousand inhabitants. Recognizing the advantage which follows the comparison of ideas and products, an agricultural and horticultural society was early established, holding regular weekly meetings. After a time an annual fair was also instituted, the completeness of which should mark the progress of the place. The fourth in the series was held early last month, and it was much fuller and more satisfactory than either of its predecessors. The attendance was very large, for in addition to the company at home, excursion trains brought reinforcements from Philadelphia, Salem, Atlantic City, and intermediate stations. A band furnished music for the occasion. There is a spacious hall appropriated for these exhibitions, with pleasant grounds around it, and an oak grove in the rear. The hall was tastefully decorated with evergreens and festoons of flowers, and rustic pictures and other handiwork of fair fingers ornamented the walls and corners. The long tables were loaded with such a variety and abundance of vegetables and small fruits as would have done credit to the richest county in the Empire State. Especially noteworthy was the show of grapes, pears, peaches, quinces, sweet and common potatoes, and melons. The soil appears peculiarly adapted to the culture of these things. There was also a good display of onions, corn, tomatoes, squashes, honey, peanuts, etc. The premium list was liberal, and special prizes were offered for ladies' equestrianism, and for specimens of Vineland printing, painting, and sculpture. There were also special awards for the best farms, and to those who showed the most taste in ornamenting grounds or in the neatness with which they kept the walk and roadsides contiguous to their premises. The Floral Society made an attractive display. Some of the designs were exceedingly unique and tasteful, especially those of Mrs. W. H. Wood, who has remark-

able genius in this direction. A mammoth strawberry, covered with immortelles, and labeled "Joe Thunder, our 1700, knocks for a premium," created much amusement. It was "the happy idea" of Mrs. J. K. Read. Among distinguished people present at the fair were Commodore Paulding and the Hon. John I. Blair. The latter made an entertaining speech. The regular address was by S. Edwards Todd, author of "The Young Farmer's Manual," "The American Wheat Cultivist," "Country Homes," and other valuable works on rural topics. The address was full of good practical suggestions, and was listened to with close attention and interest. Remarks were also made by Dr. I. P. Trimble, Entomologist of New Jersey; Charles K. Landis, founder of the colony; Mr. O. B. Campbell, secretary of the Society, and others. Altogether the exhibition was successful, and highly creditable to the managers and to the people of the place.

A. B. C.

WHEN earthing up to trees or plants, this fall, in order to protect somewhat the roots during winter and to turn away the surface water, be careful that no basins or hollows be left next the tree or plant in which water can stand. Many a tree, vine, and shrub counted perfectly hardy has been killed entire by means of a pool of water standing around and over the crown, and left to freeze, and by its pressure destroy the life of the bark. Such injury is rarely noticed until near midsummer, but then death comes and the owner seeks for a cause, and usually attributes it to some insect; or if a new plant, asserts that it is not hardy. Now is the time to attend to the subject, before the frost penetrates and locks up the ground to prevent.

LIST OF APPLES.—One of our correspondents asks us to "name a list of apples that as a rule may be generally relied upon in most of the Northwest." Just at this time it is a difficult task to name over two or three varieties, really termed as highly estimable where the apple is generally

hardy, that have been fully proven in the Northwestern country, *i. e.*, Wisconsin, Minnesota, etc.; but we will venture a list which may at least be counted as of good promise, as follows: Duchess of Oldenburg, Teton sky, Fameuse, Early Joe, St. Lawrence, Porter, Jonathan, Winesap, Wood's Greening, High Top Sweet or Sweet June, Red Astrachan, Keswick Codlin; and then, for certainty, we would plant Marengo, Hyslop, and Transcendant Crabs.

PROFESSOR OF AGRICULTURE WANTED.

—One of the first colleges in the land is in want of a competent person to fill the above position. If there are any such among our readers, they would do well to refer to advertisement in our advertising columns.

THE *Prairie Farmer* chronicles a St. Ghislain pear-tree, on quince root, standing in the grounds of Mr. W. H. Hausen, twenty-five feet high, ten inches in diameter, and finely proportioned, from which forty dollars' worth of fruit has been sold this season.

APPLES that fall from the tree in an unripe condition, those that are wormy or half decayed, may all be made of value by gathering, mashing, and pressing out the juice for making vinegar. It is best to gather and mash them and then leave them in a tub for a few days, until they get soft and soured somewhat, before pressing. The juice, with the addition of a little sorghum molasses, makes capital vinegar, almost, if not quite, equal to that made from ordinary cider.

BUY YOUR TREES IN THE FALL.—We do not care where you are located, you will always find it advantageous to purchase your trees and vines in the autumn rather than spring. You will generally get better trees and plants in the fall—you will be more likely to get the kinds you want, and if you are not ready to plant out, the trees will be on hand ready for you on the first opening of spring.

THE old bearing canes of raspberries and blackberries it is best to cut away before winter, and the sooner it is done the better, because they are constantly taking from the supply of those intended to fruit the next year, and hence they reduce the amount of vitality and strength of bud and cane and lessen its capacity to endure the climatic changes of winter.

PLOW UP TO THE ROOTS OF TREES AND VINES.—All young orchard trees, grapevines, raspberries, blackberries, gooseberries, etc., should now have the earth either plowed or shoveled up toward them, leaving the center line between rows as a surface water-line for winter drainage. Breaking of the roots by the plow at this season will not injure the plants, trees, or vines, so that the laborer need not be afraid of going too deep with plow or spade. Leave the ground as rough as it will naturally lie,—in other words, do not rake and smooth down, after plow or spade, because, when left rough, the action of the elements during winter serves almost as good a purpose as a light dressing of manure.

EVERGREENS, where they can be procured from a near-by nursery, may be removed with almost sure success during October. The trees have completed their growth, and the soil being warm when removed, the broken roots will heal and form new roots much more rapidly than in spring, when the earth is cold. Keep the roots from even a half hour's drying; and when planting, thoroughly saturate the ground immediately in connection with copious watering, before completely filling in all the earth. If a rainy time occur, the artificial watering may be dispensed with. If but a few trees are to be removed, the operator can almost always select a cloudy or drizzling, rainy day, when, if it is not quite so pleasant working, there is less care required to keep the roots from drying, and the application of water by hand can be entirely dispensed with.

SELECT HYACINTHS.—An old grower of hyacinths writes the London *Journal of Horticulture*, giving the following as among the best varieties. He considers single flowers more beautiful than the double, and hence names but few double sorts.

FIRST SERIES.

DOUBLE RED.

- | | |
|----------------------|----------------------|
| 1. Noble par Mérite. | 2. Prince of Orange. |
|----------------------|----------------------|

DOUBLE BLUE.

3. Van Speyk.

SINGLE RED.

- | | |
|--|-------------------------|
| 4. Cavaignac. | 7. Le Prophète. |
| 5. Florence Nightingale. | 8. Macaulay. |
| —This is not the same as a poor variety of the name which appears in some lists. | |
| 6. Howard. | 9. Madame Von Tuyl. |
| | 10. Mrs. Beecher Stowe. |
| | 11. Princess Charlotte. |
| | 12. Princess Clothilde. |
| | 13. Solfaterre. |
| | 14. Von Schiller. |

SINGLE LILAC.

15. Haydn.

SINGLE WHITE.

- | | |
|-------------------------|-----------------------|
| 16. Alba Maxima. | 18. Paix de l'Europe. |
| 17. Mrs. James Cutbush. | 19. Snowball. |

SINGLE BLUE.

- | | |
|-------------------|---------------|
| 20. Argus. | 22. Marie. |
| 21. Bleu Aimable. | 23. Pieneman. |

SINGLE BLACK.

- | | |
|----------------------|----------|
| 24. Duc de Malakoff. | 25. Ida. |
|----------------------|----------|

SECOND SERIES.

DOUBLE RED.

1. Duke of Wellington.

DOUBLE BLUE.

- | | |
|-------------|--------------------|
| 2. Garrick. | 3. Laurens Koster. |
|-------------|--------------------|

SINGLE RED.

- | | |
|-------------------------|---------------------------|
| 4. Amy. | 9. Ornement de la Nature |
| 5. Cosmos. | 10. Princess Beatrice. |
| 6. Duchess of Richmond. | 11. Sultan's Favorite. |
| 7. Lady Sale. | 12. Victoria Alexandrina. |
| 8. Madame Hodgson. | 13. Von Schiller. |

SINGLE WHITE.

- | | |
|---------------------------|-------------------------------|
| 14. Elfrida. | 18. Grand Vedette. |
| 15. Gigantea. | 19. Princess Helena. |
| 16. Mount Blanc. | 20. Queen of the Netherlands. |
| 17. Grandeur à Merveille. | 21. Tubiflora. |

SINGLE BLUE.

- | | |
|------------------------|------------------|
| 22. Baronne Von Tuyl. | 26. Leonidas. |
| 23. Charles Dickens. | 27. Lord Raglan. |
| 24. Couronne de Celle. | 28. Raphael. |
| 25. Grand Lilas. | |

SINGLE BLACK.

- | | |
|-------------|--------------------|
| 29. Mimosa. | 30. Prince Albert. |
|-------------|--------------------|

SINGLE YELLOW.

- | | |
|--------------------|--------------|
| 31. Anna Carolina. | 32. Heroine. |
|--------------------|--------------|

BULBS that bloom in early spring, like crocus, narcissus, hyacinths, etc., planted just at the edge and beneath the shade of evergreen trees, present a very beautiful effect when in flower, besides occupying room of little value for any other purpose.

CUTTINGS of all hard-wooded plants or shrubs, such as the gooseberry, currant, spiræas, prairie roses, etc., made and planted out this month in a light sandy or loamy soil, well drained so that no water can lay upon it during winter, will callus, make some roots, and grow off rapidly and vigorously next spring. The bed should have a light covering of straw, leaves, or other mulching, to prevent the frost heaving the ground and displacing the plants during winter; but the mulch should not be applied until the ground is completely frozen for winter.

A. R. WHITNEY, Illinois, has a bearing apple orchard of one hundred and thirty-five acres, and numbering over fifteen thousand trees. He last year marketed over ten thousand bushels of apples on the line of the Pacific Railroad. So says the *Prairie Farmer*.

STRAWBERRY BEDS that have not been carefully and deeply dug among and the plants weeded out, should no longer be neglected. It is absolutely requisite, for the production of a good crop next season, that the earth be deeply dug among and around them before the season of the year's growth is entirely closed. The plants this season lay up in their crowns store for support and vigor of growth next spring, just in principle as the bud on trees lays up within it supply for support and growth, until the roots come into activity and furnish supply; hence the necessity of giving the strawberry plant opportunity to gather abundant food by its roots before winter.

STRAWBERRIES IN WINTER AT THE SOUTH.—It has been published that strawberries can be had in December and other of the winter months with very little trouble. We very much doubt the fact. It is probable that with extra care, deep trenching, and preparing the bed, and by reason of a peculiar season, the vines will push and produce fruit; but it will be

found a rule of exception—rather, certainty; and while we advise growers of strawberries South as well as elsewhere to give them the best of culture, we caution any one upon presuming on a *certain* crop during early and continued winter in any of our Southern States.

LATE digging or plowing the ground in autumn will serve to destroy a large number of insects; and if the ground is left up rough, the winter's frosts and snows will act upon it to the full value of a light dressing of manure. Clean it first of all weeds, then plow or dig deep, one or two inches below the depth at which it has ever before been stirred. Clay grounds are especially benefited in this way. We have ourselves changed the character of a piece of clay soil, by three winters of frost action, from being one in which we could not grow a single thing, not even beans, to one producing good potatoes and tomatoes.

LATE AUTUMN PLANTING OF TREES.—We confess our preference for early autumn planting, but if we had a hundred or more apple or pear trees to plant, and the choice came between late autumn or spring, we should choose the late autumn. In autumn planting, the roots have time to heal or callus during winter, the earth gets well settled; and if the earth is well banked up around its base, the tree will be free of water at the root, and will not be swayed by the winter winds, or any more affected than when standing heeled in, as trees are often left to pass the winter preparatory to spring planting.

ROSE HEDGES.—In our Southern States the Cherokee Rose has long been grown as a hedge plant, and we have seen miles of it perfectly beautiful in appearance, and at the same time a complete barrier against intruders of all sorts. In light, thin soils this rose grows freely, and soon forms, by means of interlacing and crowding down the branches from time to time, a broad and massy line. For rich, deep soils the Chick-

asaw Rose is by some cultivators deemed superior, from it not growing quite so vigorously. These rose hedges at the South are generally regarded as their best fences, being also easily grown from cuttings, planted at once in the hedge row.

In our Northern States we have seen occasional pieces of hedge formed with the Prairie Rose, usually the variety known as Prairie Queen, and in each case, when any ordinary degree of care has been taken to plat or intertwine the shoots, the result has been highly satisfactory, resulting in forming an impenetrable barrier, and at the same time a highly ornamental one, especially in the months of June and July. A piece of hedge now in our mind, grown from the rose known as Kentucky Multiflora, mingled with Prairie Queen, certainly presented to us one July the most showy and beautiful hedge we ever saw, not even excepting the Japan Quince. For small division fences or barriers, to screen the vegetable from the flower garden or lawn, we consider rose hedges as among the most beautiful and easily kept of the many kinds that can be grown.

LAW OF THE ROAD.—The *New England Farmer* publishes the following as the rules of law governing travel upon our public roadways. It contains two points, viz.—that relative to carriages going the same way, and that relating to stopping in the middle of the road, which we think are not generally remembered, if known, and therefore we give it place in our columns.

“Our laws require turning to the right, giving one half the road. Loaded teams are by courtesy allowed the whole road when it can be done without too much inconvenience. Almost all men driving a light carriage will do this, especially on bad roads or up hill. If collisions occur when the party is out of his proper place in the road, he is liable to damage for the injury sustained, unless the being there was unavoidable by reason of the horses being unmanageable. In this case it becomes the

other party to give way, even if he has to take the *wrong side* of the road. If both parties are in fault, *neither can recover*.

“When carriages are going the same way, the foremost driver is required to turn to the left and allow the hind one to pass him on the right, if driving faster than he is.

“This law is too often disregarded, and, in fact, I suspect, is not generally known. It would seem as if common politeness ought to be sufficient to enforce the practice, did we not have such abundant evidence to the contrary in our experience.

“The law also requires that we should not stop our teams in the *middle* of the road, which is designed for traveling purposes only. We have no right to obstruct it. These are the principal provisions of the law respecting traveled highways.”

CULTIVATE CHESTNUTS.—One of our correspondents writes us that, “having about two acres of bearing chestnut trees, he has observed that such trees as were in the cultivated portion of the lot bear regularly and abundantly, but those in sod bear only occasionally, and then not as large fruit or in such quantities.” During our residence in the State of Wisconsin, some years since, an intelligent farmer called our attention to several hickory trees, standing in his cornfield, which he stated had for several seasons borne a large crop of nuts, while others standing in the adjacent “opening” produced few or none. The evidence was before our eyes in an abundance of nuts on those trees under cultivation, while the others were almost entirely barren. We should like to ask other owners of nut-bearing trees if they have ever observed the same results.—Ed.

AN ENEMY TO THE WISTARIA.—The *American Agriculturist* states that plants of the wistaria have this season been injured by the Tityrus skipper (*Eudamus tityrus*), which is described in “Harris’ Insects.” It is the first and only insect we have ever heard of preying upon the wistaria.

"WHEN you wish to procure young fruit-trees of a particular kind for transplanting, the way is this: Dig around the old tree for some eight or ten feet off, and turn the end of the detached root up out of the ground, and it will send out shoots the first season, and in a few years bear fruit of the same kind as the parent tree, and it will make just as good a tree as the one that you would have to purchase of a nurseryman and pay two or three dollars for."

[We cut the above from one of our exchanges, and give it insertion merely to draw the editor's attention, and suggest to him that when he advised as above to procure a young fruit-tree, he forgot to tell the operator that the young tree would be like the stock on which the nurseryman had grafted his variety, and it might produce a crab, tough and stringy, or a sweet fruit, dry and tasteless, but never the same kind as the budded or grafted tree procured from the nurseryman. With the facility and at the low price at which trees can now be procured, together with the more than usual knowledge and integrity engaged in the nursery profession, there is no reasonable cause, other than that of a desire to know how to do everything, on the score of economy or correctness for any planter of trees, to practice growing them himself. Our advice to every tree planter is to apply to a reliable professional grower and obtain of him trees duly named and of the best character at a good, fair, living price. Take no scrubs or cull trees even as a gift.]

GOODRICH POTATOES.—*Editor Horticulturist:* I wish to say one word about the Goodrich potatoes which are yearly advertised as one of the best and most prolific. I have grown them now four years—they produced well, but when sent to market can not be sold a second time to the same consumer, because of their inferiority in quality. I have tested the matter thoroughly, and while so far I have sold my crop freely in spring at three dollars a bushel for seed, in autumn no person knowing them

will buy at twenty per cent. below price of other eatable sorts. It is about time for this variety to be laid on the shelf and a better one introduced, which perhaps we have in Early Rose, Shaw, or some other of comparatively new introduction. A.

It is better to make cuttings of all hardy shrubs, as currants, gooseberries, *wiegels*, *spireas*, etc., in the autumn than to delay until mid-winter or spring. At this time the wood and bud are all in full health and capable of sustaining themselves into growth in spring independent of the root; but late in winter they are often so much enfeebled by exhaustion and exposure to extremes of cold, that often they fail to grow even under the best of care. This loss of vitality, if the shoot or bud were left on the parent plant, would be renewed in the spring by means of the roots, but when separated therefrom, can not be replaced, and hence the cause for a too oft failure in growing winter-made cuttings. Cuttings at this time, early in November, may be at once planted out in the open ground where they are to grow, and covered entirely first with earth, then over it a light character of mulch, as straw, meadow hay, etc., the mulch to be removed in spring and the earth also down to a strong bud. Or the cuttings may now be tied in bundles and packed in clean sand in a cool cellar or pit, or they may be packed away in thin layers, with moss intervening, and so kept for planting out in early spring.

AUTUMN PEAS.—It is not a common practice to grow peas for eating green in the autumn months, but we have found that when planted in August at a depth of from four to six inches they grow well, and during September commence blossoming; and when frosts have destroyed our beans, tomatoes, etc., our peas are ready for gathering, and prove a very desirable table acquisition for the season. We sow only the early sorts, such as *Carter's First Crop*, *Little Gem*, etc., for this late production.

A RARE MAGNOLIA.—In the *Dixie Farmer*, published at Nashville, Tenn., we find an account of a visit to the grounds of J. S. Downer, Elkton, Ky., and notice of "a magnificent specimen of the magnolia of which Mr. D. has not been able to get the correct name; some botanists who have examined it pronounced it the result of a cross of *M. grandiflora* and *M. glauca*; it has the towering habits of growth of the *M. grandiflora* and the leaf cones and fragrance of the *glauca*, and the writer believes it belongs to the latter without any admixture, but is a grand improvement in habit of growth over the normal type of its species." [Has Mr. Downer or Mr. Heaver compared this with *Magnolia longifolia*?—Ed.]

DIXON'S LOW-DOWN PHILADELPHIA GRATE.—Furnaces have now come into general use for heating dwellings of the better class, and as many of them are now constructed, maintain a genial and moist atmosphere—superior, in our opinion, to all forms of steam heating. Still, every man who builds a house, either in city or country, should have at least one open fire-place or grate, either for coal or wood. The comfort to be derived from the cheerful blaze of an open fire in the evenings of the early fall of the year, when it is yet too early to light the furnace fire, is only to be appreciated by those who have experienced the luxury. The open fire is also available on very cold and windy days—when the furnace fails to create a sufficient warmth. Of all the forms of grates that we have seen, that manufactured by Messrs. F. S. Dixon & Sons, of Philadelphia, seems to us best adapted to the purpose—as they burn either hard or soft coal or wood, are easily set in any fire-place, and are, in appearance, very ornamental.

POKEBERRY.—Those who are fond of a delicate dish of greens in spring will do well now to make a planting of poke or pigeonberry (*Phytolacca decandra*) roots. Prepare the ground by deep digging and

dressing it with a heavy coat of well-rotted manure, and after dividing the roots much as with pie plant, set them about two feet apart each way, covering the crowns an inch deep. In spring, the young shoots are gathered and cooked the same as asparagus, and once eaten, are almost universally preferred to that plant.

LIST OF PEACHES.—D. C. Benton, of Quincy, Ill., gives, in the *Journal of Agriculture*, a long list of peaches which he has fruited this year, and from which he selects the following as being his first choice for profitable market growing in that locality, viz.—Crawford's Early, Yellow Rareripe, Oldmixon Free, Late Admirable, Stump the World, Oldmixon Cling, Philadelphia, Scott's Nonpareil and Allen's Late October. To this list he adds the following as the next best varieties, viz.—Troth's Early, Reeves' Favorite, Jacques' Rareripe, President, Crawford's Late, Ward's Late Free, Heath Free, Gaskill's Late, Smock Free, Beer's Smock, and Heath Cling.

JAPAN LILIES.—A friend writes us that "the past two years he has been particularly observant of two beds of Japan lilies in a neighbor's garden,—one growing in the ordinary open exposed garden bed—the other planted among some rock-work on the north side of the house. The first blooms a few days the earliest, but the flowers are soon gone, while the latter continues in bloom nearly six weeks."

This is a significant hint to planters of hardy bulbs, as it means that the latter bed has moisture and depth for the roots, sustaining their growth for a long period, while the former, by reason of open exposure, are enhanced perhaps in period of blooms, but from the heat are brought rapidly to maturity. Planters of lilies, therefore, should, in order to have abundant and long-continued blooms, dig the ground very deep, and in spring, or just before blooming time, shield the surface by a light surface mulching.

INCREASE YOUR PLANTING OF SMALL FRUITS.—We beg to urge the attention of every owner of ground to the importance and value, as a health product for family use, of the small fruits, so termed, such as strawberries, raspberries, etc. Without any regard to pecuniary gain, or discussing the point as to whether it is cheaper to grow than buy, or *vice versa*, the free and daily use of all the small fruits does so add to enjoyment and health, that we would urge every one to plant in such abundance, that were the crop, as it sometimes is, partially destroyed by frost, winter, or other cause, there would yet be a sufficiency not only for daily consumption in free abundance, but a surplus to give away to newly settled neighbors, to can, preserve, etc. It is not sufficient that you have strawberries enough to have them for tea every day during the season,—you should have them on the table at each meal; and the bed should be free and open to your children and friends to eat as often and as many as they please. The same should be your case with raspberries, currants, etc.; and if you have not ground in abundance, then plant a little thicker, give extra care in cultivating, and reap a reward in daily comfort and enjoyment for self and family as well as making glad others, and in inducing them to follow your example.

PRESIDENT WILDER STRAWBERRY.—The publishers of the *American Journal of Horticulture* announce that they will be unable to begin the delivery before the fall of 1869.

MATTHUSHEK PIANOS.—It is not our custom to refer to advertisements inserted in our advertising columns, but in the present case we think we are doing our readers a favor by calling their attention to the advertisement of Messrs. Barlow and Matthushek. Mr. Matthushek, after years of labor, has accomplished a long and desired result, in the manufacturing of pianos, to wit: an instrument of small size and compact form, with all the advantages

of purity and volume of tone of the large square pianos of other makers. We are something of a musician ourself, and often take a little recreation by running over the keys of our colibri. We have had the instrument now several months, and wonder why we have passed ten years of our life without the solace of music. One important reason suggests itself: our little cottage parlor is of too narrow dimensions for a Steinway or a Chickering; but Matthushek's instrument occupying but little more room than a table, fits into a corner and is out of the way, is a handsome piece of furniture, and its tone is unsurpassed by any other instrument that we are acquainted with.

BOOK NOTICES.

"ELLIOTT'S LAWN AND SHADE TREES."—The author of this book, F. R. Elliott, of Cleveland, Ohio, is well-known as one of the best landscape gardeners as well as horticulturists in the United States. The object of the work appears to be to disseminate in a plain practical manner, intelligible to all, a knowledge of the size, habit, soil, etc., of trees and shrubs, and their adaptation to positions suited to their best and most permanently pleasing effect, whether planted on the roadside, in the cemetery, or private garden. It is concisely written, elegantly illustrated with drawings from nature, and a book that should be owned and read by everybody. Price, \$1 50 by mail.

TIM BUNKER PAPERS.—All readers of the *Agriculturist* will remember Tim Bunker and his talks with the farmers of Hooker-town; all will acknowledge the wholesome truths of his practice and advice then given. These papers have now been collected in a neat volume of 310 pages, and put forth to the reading public by Messrs. Orange Judd & Co., the enterprising publishers of the *Agriculturist*. All those who have a piece of land to cultivate will receive much information and a good share of amusement by a careful perusal of the book.

THE HORTICULTURIST.

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THE LESSONS OF THE YEAR.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

THIS country presents so vast an area, and is covered by so many degrees of latitude, that uniformity of agricultural experiences is absolutely impossible. Drought will prevail in one quarter, cracking the very earth into fissures, while in another the rainfall will be so excessive as to become ruinous to crops. The horticulturist whose fruits perish from lack of rain, proclaims his failure through the press, and lapses into discouragement. He who, in another section, loses his by a continuous deluge, finds his heart fail under the losses of a single disastrous season. But these varying results are annual experiences. Yet, if there be average failures, there are certainly average successes. Seed time and harvest can not utterly fail. The disasters of one season have their compensations in the success of the next. It is not the results of any single year that determine the question of success, but the average of a term of years. No business pursued by man is uniformly profitable; and if so, why should horticulture be complained of for not accomplishing results which no other occupation has yet been able to secure? Merchandising has its

ups and downs; stock and money are subjects of the most ruinous vibrations; agriculture has its vicissitudes of seasons. But when merchandise has been a drug, and the bottom dropped out of the stock market, when has any calamity short of the earthquake destroyed the sturdy equilibrium of our diversified agriculture? Its redeeming feature, in spite of occasional disappointment, lies in the certainty of its return. If they do not make us suddenly rich, neither do they permit the prudent man to become poor. Many times as much depends upon the man as upon the season.

The year now closing has had its usual share of agricultural vicissitudes, teaching many useful lessons. They have fallen most heavily on that class of horticulturists who have expected too much—the men who leave the counter or the desk for a country home. On the majority of these an unfriendly season produces discouragement not warranted by the circumstances of the case. Such season works no such depression on the minds of veteran farmers. They have encountered them before, and know that they must occasionally occur. The beginners pursue their new

business with too much energy. They plant too largely, because ambitious to accomplish great things within a brief period. They undertake and perform too much hard work, such as their previous indoor habits do not fit them to undergo. Fatigue or lassitude succeeds, while continued exposure to a burning sun is sometimes followed by sickness. They persist in laboring in the fields in wet weather, thus also inviting disease. Some have gone into the country with feeble constitutions, intending to regain their strength by rural occupation. Many realize a complete recovery of health. But others overtask themselves by undertaking too much, and instead of advancing in strength, they find themselves declining. Sickness will discourage, even though crops be generous. To such the lesson of the season must be moderation in the future.

Then a too comprehensive plan of operations is found to cost more money than was expected. Building improvements have been started which should have been deferred for years, unless the capital at command was abundant. The profits of the first year on a farm will not justify the building of a new house or the renovation of an old one. Moderation in expenditure not having been observed, they are found at the year's end to have absorbed all the working capital. Surprise is felt that crops produce less money than expenses. But too much has been expected, and too much expended. An unreasonable disappointment succeeds. The real fault, however, is not with the farm, but with the owner's management, and the year has taught this lesson to more than one beginner.

But the older hands, in common with the beginners, have also had diversified experiences. The strawberry growers have learned some valuable lessons. One of these whose grounds I often pass, went into their cultivation on a grand scale, planting many acres. His theory was the simplest imaginable—if one acre would

yield \$300, what would twenty acres yield? He forgot, however, to cipher up how much labor would be required to keep twenty acres in good condition, and made no provision for it. He expected his vines to grow and bear, but did not consider that the weeds and grass would be wanting to do the same thing. Harvest time came, with ten weeds to a single strawberry plant. Yet he picked great quantities of fruit; but it was so inferior in size and quality as to bring discouraging prices. He had grasped at too much, and failed of realizing the great profit which his paper calculations had promised. A neighbor, having only six acres in the small fruits, realized more clear gain than the twenty acres afforded; but he tolerated no weeds and but few runners. What he undertook he did thoroughly. His berries were of superior size, and sold readily at the highest price. It was *quality*, not *quantity*, that determined the question of profit. From these two experiences the ambitious owner of the twenty acres learned a lesson which reversed his opinion of the strawberry culture. He became convinced that if the market had been glutted, it was with inferior fruit only, not with a superior article, and that five acres cultivated in the best manner would return more money than twenty of his slipshod acres. He forthwith turned under three fourths of them, put the remaining five into perfect condition, and now waits in confidence for the result. But the same lesson has this year been learned by many others. If strawberry growing has been temporarily overdone, it was by excessive quantities of worthless fruit. The good article very seldom fails to pay, while of the superior one there has never been an over-supply.

As confirmatory of the theory of devoting a large amount of labor to a small amount of land, I can add the remarkable experience of Mr. P. Barry, of Rochester, N. Y., as furnished me by himself. On the 14th of August, 1866, he planted the Wilson Albany on a plot of 230 by 115

feet, exact measurement, say five-eighths of an acre. The ground is a dry sandy and gravelly loam, and for two years had been seeded down with timothy. It was plowed 8 inches deep, and no manure was used. The plants were set 18 inches apart each way. The ground was kept well hoed, the runners being cut off. During the next winter the plants were protected by a thin covering of wheat straw. The next summer, 1867, about 500 quarts of berries were picked; but in 1868 the number of quarts reached the astonishing figure of 5,874, or at the rate of 9,400 per acre—within a trifle of 300 bushels. Mr. Barry says, "Our man who managed the ground says that he could get even larger results from our seedling Nicanor. He has it largely planted now." Also: "You will observe that the plants were set close together—18 inches. The runners were kept down, and yet before fruiting the plants covered the ground so that no mulching was necessary." How much money this crop of 5,874 quarts produced was not stated, but at prices realized in this market it would have yielded \$1,174. With such returns the grower can afford to keep the hoe continually going.

A winter of exterminating severity has tested the endurance of numerous horticultural novelties, and shown some of them liable to be killed by excessive cold. Even standard favorites, never previously injured, were found unable to withstand its rigor. Such casualties, though really exceptional incidents, have their value in teaching us what varieties are perishable and what are not. The lesson of that winter is, that we should reject the former and adopt the later. At a time when the horticultural public is pressed on every side to purchase the novelties which swarm before it from every quarter, a test winter of this trying character is not without its uses. Two years ago a raspberry was shown me by a gentleman in whose garden it came up as a volunteer. He had been struck with its great size and productive-

ness, and had multiplied it up to nearly a hundred plants. It exceeded the best I had ever seen or tasted, the berries being an inch long, by my own measurement, of light red color, fine flavor, and so thickly strung upon the canes as almost to exceed belief. I showed the fruit to a dozen experienced raspberry growers, who were also powerfully impressed with its value. They agreed with the owner of the plants that there was money in such a raspberry. I also felt sure that if properly managed, a small fortune could be realized from it. As we could not patent the discovery, we resolved to quietly propagate it until a large stock had been produced. It had already passed unharmed through three winters, and we had no suspicion of its being only a half hardy plant. But the last one killed the entire stock, root and branch, thus literally blotting out the most remarkable raspberry I have ever seen or heard described. But its brief term of existence teaches that nature has yet in store for us a better raspberry than has hitherto been publicly known, and that perseverance in propagating seedlings will be certain to develop it.

The year has also brought its lessons touching grape culture, some useful and encouraging, with others sadly the reverse. Old localities in which the vine had been long and successfully established, have given token of declension. Old favorites have also shown signs of ceasing to be productive. Some of the modern and highly popular varieties have died in various localities by wholesale, while in others they have proved utterly unthrifty. The general experience has been full of antagonisms, such as the crowd of grape growers at numerous conventions have been unable to reconcile. Yet the grape culture goes on, and is continually enlarging its area. New varieties are being constantly produced. Hybridization has become a mania, but with sane results. It has made its mark on floriculture also, and in some instances has unsettled the accepted for-

mulas of our botanical patriarchs. Mr. Wilder announces that species can be made to cross. He has crossed the Japan lily with the Tiger, and has produced "all shades, and between red and white, from the softest blending to the darkest spots of crimson." Such discoveries open "a field whose boundaries are lost in the horizon, and will still be receding as we advance." Mr. Meehan, from his own careful experiments in hybridization, thinks that enough is being developed to show that instead of the old doctrine, that like produces like, being the law, nature takes peculiar pains to prevent the like producing its like, by making special efforts to prevent self-impregnation. Thus, says Mr. Wilder, "change and variation, in the plant world, seem to be the order of the day."

But in this world there is no unmixed good. The year just closing has taught to some the bitter lesson that with certain commodities it is really possible to glut the market. Seven years ago the people of Wisconsin went largely into the cultivation of hops. This extension of a small business was stimulated by the heavy whisky tax of 1861. Malt liquors came suddenly into extensive demand, as there were indications that Americans were likely to become a beer-drinking people. New York, the then headquarters of the hop culture, was showing a diminished production; the demand was rapidly increasing; prices went up to a highly remunerating figure, and the prospect was that the demand for hops would be unlimited. The soil of Wisconsin had been proved to be favorable for hop growing, and land was cheap. Then the crop in England had been failing, and our importations had ceased, thus throwing our great army of prospective beer drinkers on our own resources. From small beginnings in 1862, the Wisconsin crop yielded, in 1865, over 4,200 bales of 200 pounds each. In 1867 it rose to 31,000 bales, of which two-thirds were produced in one county. This immense crop

sold at sixty cents per pound, the production costing only twenty cents, in many cases even less. Of this profit the county of Sauk received \$2,000,000. The hop growers became wild with excitement over their success, and the infection spread to others, hundreds of whom prepared to embark in the business. Poor folks with only an acre of land—in fact, all classes—took to hop growing, many of them staking all they were worth, and abandoning all other occupation.

The infatuation of the multicaulis speculation of thirty years ago was repeated. The vast profits of preceding years did not satisfy the men who had secured them—they were not enough—they wanted more. These invested them in extending the business, in buying more land, planting new hop yards, building more houses. Farms were purchased at high prices, and mortgages given for a portion of the cost. Such land as could not be got into hops was allowed to grow up in weeds. As to grain, not enough was raised for home consumption. These enthusiasts lived well in the mean time, for money was flush, and to be more so the coming season. Its profits were readily discounted by the merchants in the shape of generous supplies of merchandise, to be paid for when the hop harvest had been secured, as no one dreamed of diminished crops or falling prices. But the results of this year have disappointed all these brilliant expectations, covering the scenes where hop growing was most active, with pecuniary wrecks. Congress reduced the whisky tax so low as to bring into active use the millions of toddy sticks which a two-dollar tax had made idle, and our people abandoning lager, returned with new fervor to their ancient favorite stimulant. Worse than even this depravity of taste, the hop louse and the mold attacked the crop, destroying half. Whatever remained was saved in a damaged condition. This small remainder overstocked the market. Prices fell from sixty to seventeen cents. Multi-

tudes of small adventurers were ruined. Owners of mortgaged farms pleaded to be released, by re-conveying to the mortgagees, content to lose all they had paid upon them. The merchants could collect nothing for the supplies they had advanced, for payment had been dependent on the hop harvest. It was the complete counterpart of the multicaulis mania.

The lesson of the year to such as have suffered from the hop disaster, should be moderation in the future. It is really a difficult one to learn, for this country is full of hobbies. Many such are annually started on their travels. All of us are impatient for a ride, not only on our own, but on our neighbor's. We mount this or that hobby in platoons, our impulses, rather than our judgment, sometimes our ignorance, governing the choice. Every hobby has a gold mine of some description in the distance, toward which he is galloping. As no hobby can carry a burden of unlimited weight, this one upon whose back all hands have mounted will in time break down. If it be a high horse on which we have been riding on the road to fortune, the fall will be disastrous, and our pecuniary bruises and dislocations will be in proportion to the height which we may have mounted. But there are always riders who do not choose to wait until the break down comes. Though everything looks lovely, they still feel misgivings as to wind and bottom, and slip off safely and sound, satisfied that their gallop has been long enough. The crowd sweeps onward, some too exultant to notice the deserters, some pitying their timidity, others greeting it with ridicule. But as the multitude of riders is constantly

increasing, the places left vacant by deserters are quickly filled by others.

These hobbies have been almost numberless during many generations. They travel on every race-course to fortune, not only here, but in all other countries. Hobbies are corollaries of a high civilization. Neither Hottentot nor Esquimaux has ever been exhilarated by their advent, or cast down by their collapse. But no highway in American horticulture has been long without beholding some of them. Even the quiet byways of agriculture have lively recollections of their ephemeral existence. They are paraded through the press in captivating leaders; they are heralded in great conventions and at annual fairs; they draw out the highest touches of advertising eloquence. Their circle of attraction is apparently unlimited, making common property of the rarest exotic and the latest new potato. Nothing is so lowly or so lofty that it can not be converted into a hobby. Doubtless there are other hobbies now stabled and in training for a start; for hobbies are munificent paymasters to the shrewd men who first trot them out for the admiration of a people ever ready to bestride them. Yet hobbies may be counted good things. We Americans need a succession of excitements, and most of these may be so driven as to be comparatively innocent and safe, if ridden in moderation. The lesson of the year is that if hobbies in horticulture are to be continually trotted out, tempting us to mount and ride, we should be careful not to climb so high among the crowd as to be unable to slip off safely before the inevitable break down comes.

A TWENTY-YEARS' PRESIDENT.—At a recent annual exhibition of the Norfolk County (Mass.) Agricultural and Horticultural Society, Hon. Marshall P. Wilder tendered his resignation, he having held the office of President twenty years.

POCAHONTAS PEAR.—Can any one supply us with specimens of this variety, or tell us something about it? We find a note of it in one of our memoranda, but have no recollection of it, except that it was small, round, and beautiful.

A LITTLE MORE GRAPE.

BY F. R. ELLIOTT.

ONE year since, in making a record of the season relative to the crop of grapes at the West, I was enabled to chronicle it as one of the most successful ever known throughout the North and West. The past season, however, does not record as favorably, when the full maturity of varieties is taken into count. The vine over the entire country wintered safely; an account of injury came but rarely among the reports published in the spring; the fruit set well; little or no disease appeared anywhere until into September, when some localities furnished items of rot and mildew, but of no great amount of value, except with the late maturing varieties. Up to September we had an average amount of clear sunshine and dry warm weather, but during the month of September we had cool nights and a preponderance of cloudy days; and while rot and mildew attacked such varieties as Catawba and Isabella at the South and Southwest, the same varieties at the North progressed so slowly in maturing, that when an unprecedented early frost (8th of October) destroyed in part the foliage, they were unripe in most localities, nor did they mature sufficiently to be really palatable for table use, or of value for wine-making without the process of Gallicizing. The early maturing varieties, such as Concord, Delaware, etc., by means of the cloudy condition of the weather in September, continued a more than usual length of time to retain their full spirit and vivacity, without the Delaware becoming too vinous, or the Concord cracking as they do when over-ripe. Concord growers, by reason of the season, are again satisfied that there is no grape for the million to compete with it, either for table or market purposes. Essays and labored writings touching the grape, its culture, soils to

which it is adapted, etc., together with reports and commenting notes, have been even more abundant the past year than ever before. Among these the best that has met my eye was an essay by Dr. J. Stayman, Leavenworth, Kansas, and read before the Mississippi Valley Grape-Growers' Association, in the proceedings of which, I presume, it can be found, and from whence it should be procured and read by every grape-grower. In this essay, the most complete record and reasoning explanatory for the success or failure of the grape in soils and localities are given; and as the author's views coincide with my own observations respecting the comparative value of surface with that of under draining, I extract the following relative thereto:

"Having shown that wherever excessive moisture exists the cultivation of the grape is uncertain, and wherever extreme dryness exists it is successful in regions of favorable temperature, we shall now give what we believe to be the principal remedies to overcome this excessive saturation of the soil.

"If our conclusions are correct, *surface draining* is undoubtedly the most important; for if the soil does not receive more than a proper amount of rain, there is no necessity of underdraining, unless the soil is naturally wet or receives it from adjoining lands. The next most important is location,—in fact, it is but a different expression for the same thing, for we can more effectually surface drain by selecting a location than by any other means. The sides of steep hills, gentle slopes, and even the summits of high hills are the best, and stony land mixed with shale or pebbles, with clay subsoil of sufficient richness, would be the most desirable. So important is surface draining, that we might sum up the whole

success of grape culture to depend upon it in a wet season. We have closely watched the effects of planting upon level ground, even well drained, and I find it useless to compete with the high hills and steep slopes, and we have removed our vineyards accordingly, a few years ago, with most excellent promise."

To the new planter this point of selection of land is one of vital importance, for upon it in a great measure will depend his success or failure in profitably growing the grape; and while I am not yet prepared to regard steep hillsides or high hills as absolutely essential, I am satisfied no success can be permanently depended upon where the surface water can not be drawn off by merely opening furrows or shallow surface drains. Localities connected with the country must decide the comparative values between high hills, steep banks, or a rolling lay of land from which the surface water drains off almost if not quite as freely as from a hill. A level piece of land from which the surface water can not be readily drawn off, will not grow a reliable and permanent vineyard, no matter how thoroughly it may be underdrained. The next item which the planter of a vineyard wants to know, after having selected his land, is, what grape to plant? and in answer I fail to find any conclusive unity of opinion among writers, and my own notes and observations lead me so far from any decision, that if the question were asked me, I should do as others do, give a decidedly mixed list.

The *Mottled* grape has this year appeared at the Ohio State Fair in superb clusters, and because some persons have counted it valuable for wine purposes, a little clique of men thought there was a move to make money by its sale, and as they, on once seeing it, did not happen to judge of it favorably, they at once published a short description, and called it "hardly good," designed, I suppose, as a caution to the public not to be gulled by it, should any one offer it for sale. I spoke of it last year as one "most successful under high manu-

rial cultivation, hardy, and preferable to the Delaware for wine purposes." I am now fully satisfied that statement was correct; but if any one judges of it in comparison with the Delaware as a table grape, they will record it as far below.

The *Miles*, although a small grape, ripened the very first of all this season, and two years of its acquaintance induces belief that it is a profitable variety on that particular account. Side by side with Hartford it was ripe and sweet, just as Hartford was colored.

The *Hartford* colored and was eatable a week earlier than Concord, when grown in an open uniform exposure; *Israella* colored a few days sooner than the *Adirondac*, but it did not ripen as soon. The value of either one for market purposes, I think will require many years ere discovered. The *Eumelau*, a new (to the public) grape just brought out by Dr. Grant, is to me but a slight advance on the old Early Black July. It is early, and should be tested.

The *Walter*, another new sort, but now offered to the public, has been cautiously shown, and at the New York Grape - Growers' Show at Canandaigua, in October, received a first premium. It is a grape of good qualities, and should be tested widely. From a bunch kindly presented to me by its proprietor I made the accompanying drawing and description. It will be noticed that my drawing does not equal in size that of the published one by its proprietor, but after seeing what I have of Iona this season, I am not prepared to say his is overdrawn. I once thought Dr. Grant's pictures of Iona a little exaggerated, but I have this season examined bunches on the Lake Shore fully up in size to his best pictures.

Description of the *Walter*. Bunch of medium size, moderately compact shouldered, short peduncles; berry, round, medium size, larger than the Delaware, but not as large as the Catawba; nearly uniform in size; light copper red; skin, thick, but not harsh or astringent; flesh almost free

from hard pulp, juicy, rich, and sweet; seeds, one in a berry, long blunt oval in form, and of a light brown color.

The *Hine* has again shown as one promising of value, in size of bunch equaling Catawba, more delicate in quality of flesh, and early as the Concord. Messrs. Ellwan-

ger and Barry have a number of new seedlings, of which they courteously sent me samples, and from them I have made drawings and notes descriptive; but as I am not advised of their offering any of their numbers for sale, I will only record the item of production, and add that there is in two or

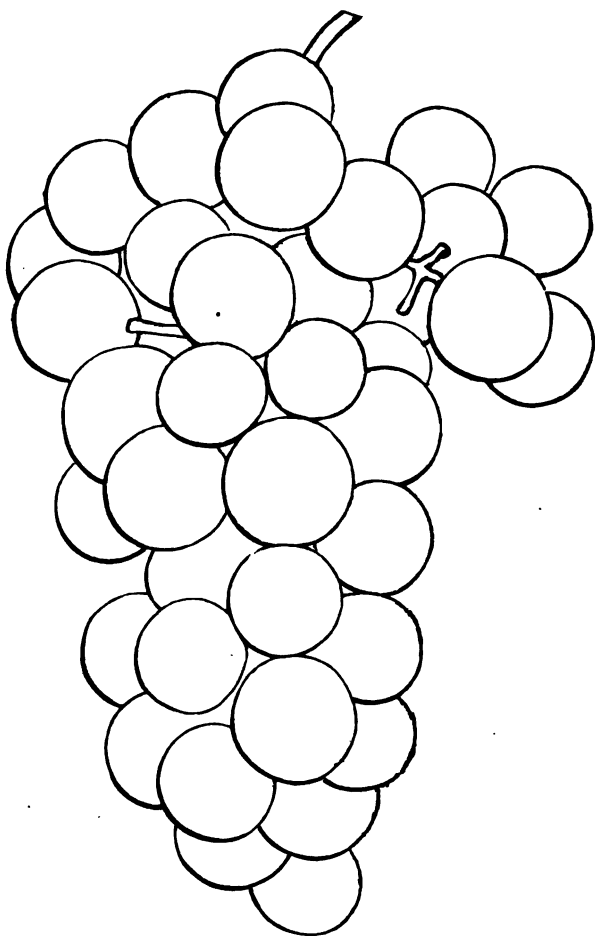


FIG. 103.—*Walter Grapes.*

three of the numbers sent me a character of flesh differing largely from most, if not all, of our native or hybrid native grapes, and that if the vine of one of the numbers is hardy and productive it will be a decided

acquisition should they choose to disseminate it.

Of the *Rogers'* varieties, much and more has this season been written *pro* and *con*, the general tenor, however, giving them

a tendency to mildew in leaf, a character which, in my observation, has only been apparent on vines growing on level lands having a clay hard-pan subsoil. The bunches on young vines of nearly all the numbers are often small and ragged, a fault that age appears to remove. Of the red or copper colored numbers, 3, 5, and 9 claim

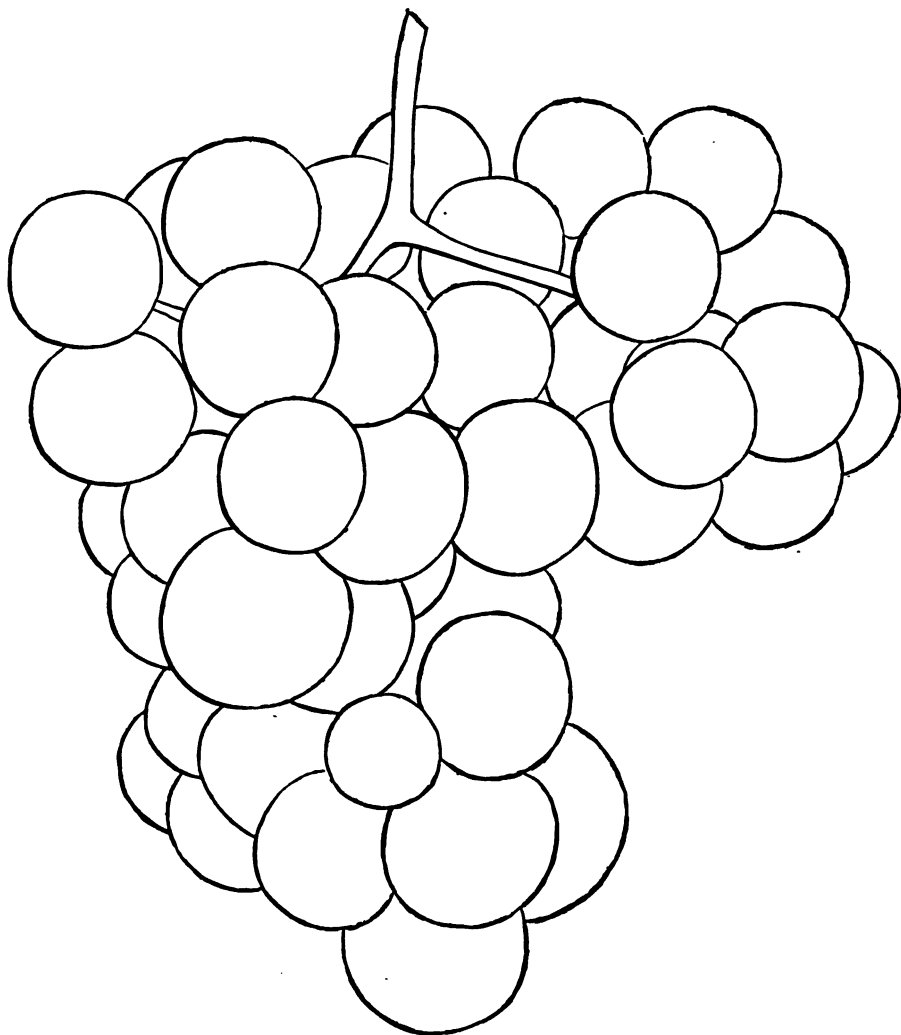


FIG. 104.—*Rogers' Grape, No. 44.*

superiority—3 being the most palatable, but that taste did not impress me of its but not as sweet as 5 or 9, but void of the superior value compared with 3, 5, or 9. strong foxy aroma which 5 always has. Among the dark or black varieties, 4, *Salem* I have eaten but once this season, heretofore counted as the best, has in

this year's observations had to give place to 44, a drawing of which I here present. The bunch is large, compact, and heavy shouldered; berries, large, round, black, with a heavy blue bloom; flesh, juicy, sprightly, with little pulp, moderately sweet, rich, equal or superior to 4 in quality and a better average bunch.

Norton's Virginia, as a wine grape here, on the Lake Shore, promises all its best, friends in Missouri have said of it; and notwithstanding the birds were more than usually numerous the past fall, and the owner of a vineyard of it had to gather earlier than otherwise he would have done, yet the wine is superior.

Isabella has not ripened well, and when the early frost came it was too imperfect to

sustain itself, and hence the berries fell rapidly and early from the bunches. It has been this year an unprofitable sort.

With a word on *Catawba* I will close my fruit record, because every time I think or speak of it I am filled with sorrow at the record that in truth must be made. As a general rule, owing (of course) to the cloudy September and the unprecedented early frost, it has not ripened its fruit in but a few localities on the Lake Shore. Upon the highest points, with clay shale soils, it nearly perfected, at least so far as to be more than good, but generally it has only become colored, without any development of sugar, and yet if I had to plant a vineyard on the Lake Shore I should use sevenths of *Catawba*.

GOLDEN CHAMPION GRAPE.

In a former issue we gave an extract from the *English Gardener's Chronicle* on the subject of this new grape, and we now find a fine illustration in the *Florist and Pomologist*. We have seen large bunches

of grapes, but not berries. Those of the Golden Champion are enormous; our cut shows the size of two of them. The editor remarks:

"This new fruit is one of the grandest ac-

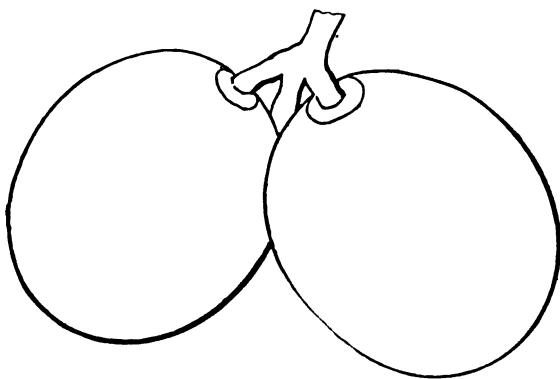


FIG. 105.—*Golden Champion Grape*.

quisitions of recent years. Free and robust in growth, hardy and prolific in habit, magnificent both in berry and cluster, and exquisite in flavor. It was raised by Mr.

W. Thomson, of Dalkeith, some five years since, from a seed taken from a grape that was itself a cross between *Champion Ham-burgh* and *Bowood Muscat*."

THE KELSEY PEAR.

BY F. R. ELLIOTT.

ABOUT fifteen years since a small pear- by him was staked and cared for, until
tree seedling came up in the garden of about five years ago it fruited.
William Kelsey, Esq., Columbus, Ohio, and At first the fruit was so unpromising in



FIG. 106.—*The Kelsey Pear.*

appearance, that Mr. Kelsey, not knowing second season of its fruiting, a German,
at the time much of pears, or how to ripen working his garden, asked one day what
them, considered it of little value. The he should do with the pears that were on

that seedling tree. He was told to feed them to the cow. "Oh, no," says the man, "I can sell them for two dollars a bushel;" and this he was permitted to do. The following season the dealer to whom the German sold the pears came to engage the crop, and on conversing, Mr. Kelsey learned the pears were really good, if kept until they mellowed or ripened, and accordingly he saved up a portion of the

crop, keeping some of them until February, when they were found to be delicious in eating.

This season I have received and eaten of the fruit, and after visiting and examining the tree, make the following description:

Tree, upright, partially spreading in habit, vigorous but not rampant grower, making annual shoots of medium size and length; young wood, dull yellow brown;



FIG. 107.—Outline of *Kelsey Pear*.

leaf, small, regular oval pointed; leaf-stalk, slender; bud, prominent, pointed.

Fruit, above medium to large—see the two outlines;—form, roundish obovate, surface uneven; color, dull green, becoming yellowish when well ripened—some considerable marblings of russet toward the calyx end, and slight scattered traces

and dots of russet all over the surface—many small dark green dots; stem, slender, about one inch long, set in a broad acute cavity with a slight lip; calyx, small, open, with short, erect segments; basin, varying—in some broad and open, in others narrow acute, sometimes slightly furrowed; skin, thick and harsh; flesh, greenish

whitish yellow, fine-grained, melting buttery, juicy, vinous, sweet, slightly aromatic; core, small, without any harshness or gritty surrounding; seeds, very plump,

oblong obovate pointed, light brown with a dark rim. Season, from October to February, ripening along gradually.

VARIETIES OF MELON.

Of all our summer fruits, none are more rich and delicious, more grateful to the palate, than a well-grown and ripened green-fleshed or nutmeg melon. There is, however, a vast difference in the quality on the same vine, even where the soil is best suited, owing to its need of a warm, clear sun to mature it to perfection. We have eaten fruit, one week, of delicious richness, and again from the same vine, a week or so later, that was hardly palatable, entirely attributable to the condition of atmosphere. There is also just as much difference in the varieties grown side by side with soil and culture alike, as there is in any other fruit. Again: the plant intermingles so readily in its blossoms with other sorts, or with any of the *curcubita* family, that it is extremely difficult to obtain pure seed of any one sort. With pure seed obtained, however, no one fruit will better repay care and culture than the nutmeg or green-fleshed melon. In our practice we sow our seed on pieces of reversed sod, placed in a frame with a very gentle bottom-heat, about the 1st of April, and as soon as they are evidently striking roots too deep for the sod, we transfer them to another frame, placing under each three thicknesses of reversed turf or sod, and giving each near two feet of room; from this they go to the garden, where they are for a time protected at night and on cold windy days by means of a box frame with a cover of cotton cloth. Our soil is a bright sandy loam, not rich, but each year having a little well-rotted manure dug into it; and when we plant, we place the plant nearly on a level with the surface, and afterward keep it clean of weeds. We never draw

earth up to the plant in the common way of a mound or hill. Such has been our practice for some years, and by it we have succeeded in producing a good crop. As we have said, it is difficult to procure varieties true to name, owing to the readiness with which the pollen intermingles if two or more varieties are grown within a hundred yards of each other; but if seed is not wanted to be obtained from the crop, the flavor or character of the year's crop is in no way affected by proximity to other melons, cucumbers, etc. To our taste, the green-fleshed melons are the best, but many persons like the yellow or orange colored fleshed varieties, commonly called Cantelopes, a name or appellation that, according to Loudon, was "bestowed on them from a seat of the Pope near Rome, where this variety is supposed to have been originally produced."

From our notes we extract the following as our judgment on varieties, assisted at times by friends with appreciating tastes:

Alford's Hybrid.—This variety varies much in form—(see our two drawings). It



FIG. 108.—*Alford's Hybrid*.

is of a pale whitish green color, rather deeply ribbed, moderately netted, sometimes almost smooth, moderately thick rind, flesh whitish green, good but not rich. It is not an early maturing variety, the first fruit about a week after the citron.

FIG. 109.—*Alford's Hybrid.*

Nutmeg.—This old variety is larger than the one under the name of Skillman's Fine *Netted*, but not as productive,—nor with us is it as rich flavored.

Christiana.—This is an early maturing variety, with a reddish yellow flesh, sweet, but lacking flavor, larger than the green-fleshed sorts, but not as large as the old yellow cantelope once so common, but now rarely grown except by people who have no knowledge of the new and superior sorts introduced of late years.

Skillman's Netted.—We have grown this variety something over ten years in succession. It is very productive and early, not as large as some, but fully makes up in num-

FIG. 110.—*Skillman's Netted.*

bers. It is roundish in form, with fine netting, thin rind, and thick, greenish flesh, rich, sweet, and highly perfumed.

Ispahan.—This old sort we have tried repeatedly to grow to a character meeting the reputation it has often received, but so far have failed. With us it is large, handsome outwardly, of a light sulphur yellow, but the flesh void of any but a sweet dead or flat character. In our Southern States it may be desirable, but according to our experience is not worth growing at the North and West.

Huntington.—This variety we have grown two seasons. It is a strong spreading

grower, quite productive, bearing a fair-sized fruit generally, long oval in form, as our drawing shows, with broad deep sutures, and broad lines of netting generally longitudinal. When fully ripe it is

FIG. 111.—*Huntington.*

lemon yellow, with a creamy yellow flesh, sweet and rich, but not agreeable in flavor.

White Japan or Japanese.—This is a quality of flesh one of the best, but with us not a productive sort. It is of a medium size, whitish green, slightly netted, flesh greenish white, melting, and delicately sweet. Henderson describes it as having yellow flesh, but none that we have seen possessed flesh other than a greenish white.

Citron or Green Citron.—Of all the varieties we have ever grown or eaten, none possesses the rich sweetness, delicacy, and perfume of this variety. It is of medium size, larger than Skillman's,

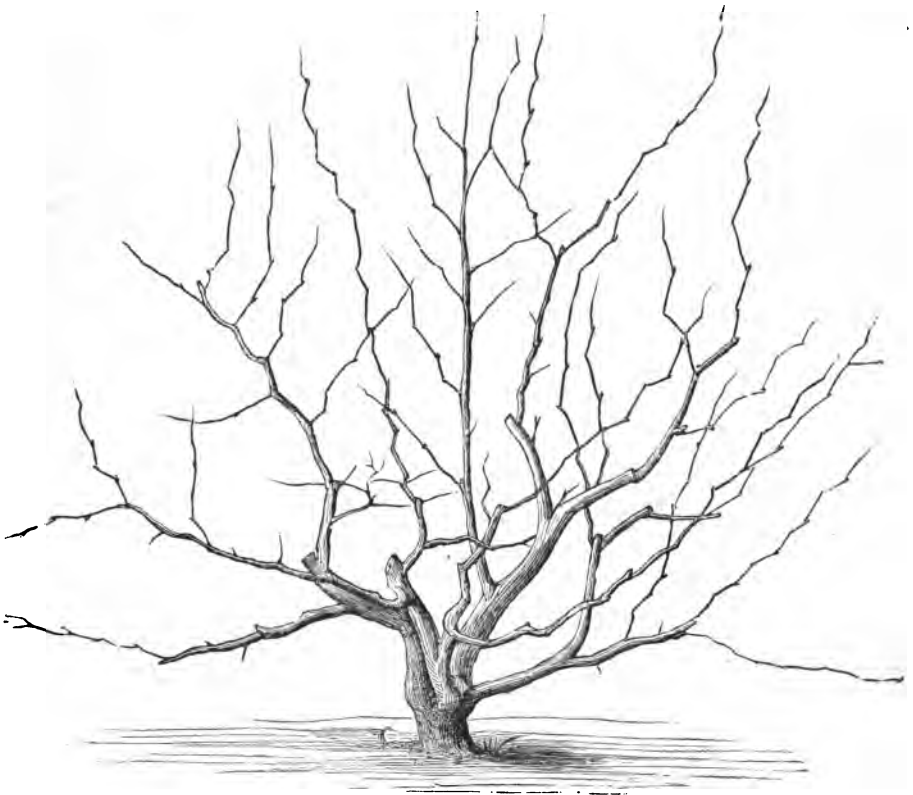
FIG. 112.—*Citron.*

but not as early; a light blue green until fully ripe, when outwardly it is a pale yellow or yellow green, ribbed and with broad raised nettings; flesh, thick, green, very rich, sweet, and delicious.

Were we to select two sorts we should take Skillman's and Citron, and for a third, Alford's Hybrid.

PRUNING DWARF PEARS.

MANY suppose, when reading of the necessity of pruning dwarf pear-trees, to make them bushy and induce early bearing, that the lower limbs should all be taken off and only an occasional end branch be shortened. We therefore, in order to disabuse any such impression, give an illustration here of a Rosteizer pear-tree, shortened in annually from its first year's growth, and now five years old. We show it just as it is, although it is apparent that little extra care in cutting would have avoided the knobs of dead wood now seen on some of the earlier cuts. Recently we passed through an amateur's grounds, who, in showing us his dwarf pears, drew our at-

FIG. 113.—*Rosteizer Pear-Tree.*

tention, with great apparent satisfaction to himself, to his summer pinching, and the consequent production of fruit buds at the terminus; but although we did not say so, because of his sensitiveness, we confess we felt annoyed that any one should

copy from him, because in his summer pinching he had waited until the branches had grown one to two feet, and the result is, that next year his trees will throw out a world of cross shoots, with little elongation at ends, and necessitate a complete

cutting back the next year, thus losing at least one if not two years of time. If any of our readers have committed a like blunder, our advice to them is to cut back this coming fall or winter pruning, without

regard to terminal fruit buds, but with regard to the ultimate form and durability of the tree, for it is all-important that the leading supporting limb buds should be kept near the base or below fruit bud.

CHENANGO STRAWBERRY-APPLE.

SYNONYMS: Frank Buckley—Jackson—Sherwood's Favorite—Strawberry, according to Thomas.

Fruit, medium to large, roundish oblate conical, rich clear red on the sunny side, with

a few suffused light gray dots in the shade a pale light yellow ground with broken stripes and shades of clear red and a few small raised dots; stalk, short; cavity, deep, broad, open, regular; calyx, large,

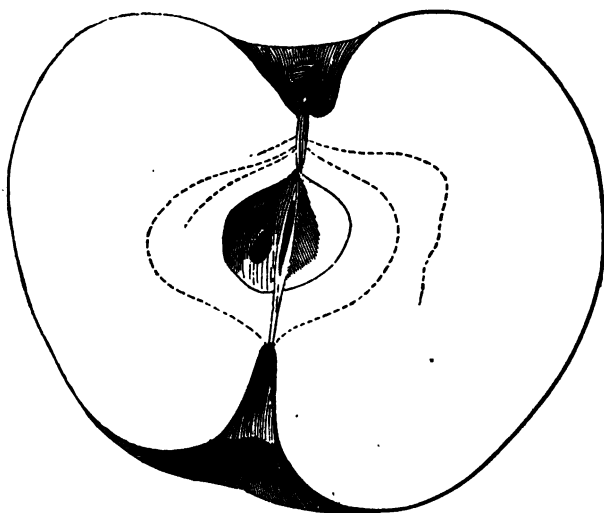


FIG. 114.—*Chenango Strawberry-Apple.*

open with erect, pointed, recurved segments; basin, round, smooth, even, rather deep; flesh, yellowish white, crisp, tender, juicy, mild, sub-acid, aromatic, rich; core, medium; seeds, ovate, rich brown. Season, September and October.

Tree, an upright, spreading, but compact grower, with broad rich dark green foliage, young shoots light colored. This is one of our most valuable fall apples, comparatively but little known, and yet one of the best for table, family use, and market.

BURR'S NEW PINE STRAWBERRY.—R. A. Moore, of Kensington, Conn., writes that he has this variety true, having had it from its first introduction, some twenty

years ago. He is not a dealer, only an amateur grower, and therefore those wanting the plants will govern themselves accordingly.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

MR. EDITOR: In your valuable magazine for September you had a contribution from my highly esteemed friend P. W., of Taunton, Mass., on that variety of French chickens called *Houdans*. From a pretty critical investigation of the merits of this variety, both from personal observation and from reading, I have come to the conclusion that my friend failed to do them the fullest justice in his communication, and I have made up my mind to present their claims to popular favor a little more elaborately than he did, in the article referred to.

M. Jacques, one of the most intelligent and reliable French authorities on Poultry, in speaking of *Houdans*, says: "It is one of the finest breeds of fowls, and nothing is richer than the aspect of a poultry-yard composed of *Houdans*; but their good qualities are far beyond their beauty. Besides the small weight of bone, the quality and delicacy of the flesh, it is admirably fecund and precocious. The cock chickens attain a large growth in four months, and with ordinary care put on fat and attain a large size. The pullets make magnificent poulardes, and, among all breeds, this it is that shows the least difference in weight between the cock and pullet. They lay abundantly at an early age,—the eggs are large and remarkably white. Like all large layers, this is a poor sitter."

Mr. C. W. Gedney, of Kent, England, in a recent communication to the London *Horticulturist and Poultry Chronicle*, says of *Houdans*: "I have reared an average

of nine chicks from every sitting of thirteen eggs during the past two seasons. Some breeders would call this good luck, but in my opinion it is what any person, by the commonest attention, might do with *Houdans*, in the most limited space for rearing chickens. I reared all my birds in a sandy yard for the first three days, giving them chopped egg boiled hard with bread crumbs and lettuce; and after the third day their staple food was middlings and lettuce, with an occasional handful of shelled oats. With this food, supplied little and often, the birds grew with wonderful rapidity,—and an aptitude to make flesh is a strong argument in favor of this breed for table purposes. Its flesh is delicate, tender, and nutritious. My *Houdans*, hatched in April, were fit to kill a month before *Dorking* chickens of the same age; but, unlike other fowls, the hen birds are the most rapid of growth, and when only a few hours old may be distinguished from the males by their superior vigor and larger crests.

"As layers, the *Houdans* will hold their own against any fowls with which I am acquainted,—their eggs are large, of a fine rich flavor, and equal in weight to those laid by the famous Spanish. The *Houdans* never sit—they are gentle, very tame, and of a contented, stay-at-home disposition, and not at all dainty feeders.

"As a proof that fanciers are becoming alive to the increasing popularity of *Houdans*, I may point to the fact that the 'National Poultry Company,' at their late sale, obtained \$42 for their prize cock and hen, which was the highest price paid for

any two birds among the eight hundred sold."

The editor of the London *Cottage Gardener*, in a recent number of his paper, and in reply to a correspondent who asked his opinions in reference to the popular French breeds of chickens, says: "Houdan fowls are very hardy, more so than the La Flèche or Crève Cœurs, the cocks of which latter breeds die by scores, and are subject to complaints hitherto unknown. They bear close confinement without injury to their usefulness. They are never sick—they are much heavier than they appear to be—have good square bodies, are broad across the back, have short whitish colored or speckled legs, and five toes on each foot. In color they are speckled, and have crests and muffs, and are superior layers."

A writer in the *Journal of Horticulture*, of August 15, who signs himself "Lindum," says: "As egg-producers, Houdans are, I have no hesitation in affirming, unrivaled. They arrive at maturity at an early age, are extremely hardy; and their deep, full breasts render them especial favorites with the cook."

"An Amateur Breeder," in the same journal, of September 5, referring to "Lindum's" article on Houdans, says: "I can bear testimony to the unsurpassed qualities of this breed. I have four hens which have laid more eggs this spring and summer than all my Cochins-China, Spanish, and Hamburgs together,—and, moreover, they never incubate."

Mr. W. Massey, in a communication to the *Cottage Gardener*, in speaking of the French breeds of poultry, says: "Having imported and disposed of many hundreds of the French varieties of fowls, for the National Poultry Company, I think my experience may be of some interest to your readers. The three breeds, I think, are very useful introductions to our poultry-yards, and I rank them in order of merit—first, Houdan; second, Crève Cœur; and third, La Flèche. The two latter are more especially suited to a genial climate and

dry situation. The greatest drawback in this country to Crève Cœurs is that, in change of temperature, they are subject to attacks of cold, approaching to, and not unfrequently ending in roup. The same may be said, in a certain degree, of the La Flèche, and there is in this variety an unaccountable mortality among the cocks.

"The Houdans are a very hardy race, easily acclimated, have vigorous constitutions, bear almost any confinement, and are prolific layers of large eggs, which they continue to produce nearly throughout the year. They are very fertile, much more so than the other varieties of French fowls, consequently there is a large proportion of chickens, which are particularly hardy and easily reared. It is a common saying at the National Poultry Company's establishment, "You can not kill a Houdan chicken." Being non-sitters it will, of course, be necessary to incubate their eggs by some other breed. Brahma hens accomplish this in the best possible manner. An adult cock, in condition, will weigh from seven to nine pounds, the hens about the same; and chickens from four to four and a half months old, five to six pounds, with a remarkably small proportion of bone and offal. I am strong in the opinion that in a given breeding stock, with equal advantages, a greater weight of flesh and eggs would be produced during a season, and of first-rate quality, from the Houdans than from any other known variety of fowls."

The testimony of breeders in France and England, as well as in this country, is so general and conclusive as to the merits of Houdans, that the writer is compelled to believe that, as egg producers, they are destined to take rank with the most popular breeds in this country,—and, notwithstanding the high prices at which they are generally held, he has made up his mind to make a small investment in them, and test their qualities the ensuing spring. E.

BRAHMAS.—An English gentleman recently wrote to the editor of the *Cottage*

Gardener to inquire what specific kind of chickens he would advise him to keep, as being least troublesome and most apt to yield a fair return for the care extended to them. The editor in his reply says: "If you wish to have the best possible return with the least trouble, we advise you to keep Brahma Pootras. They are very hardy, good layers, good sitters, and good mothers. They are also very useful table fowls; and will do well in such a space as you name."

This brief but just tribute to the merits of Brahmas will meet the sanction of almost every breeder who has given them a fair and intelligent trial. E.

FOWLS FOR THE TABLE.—A writer in the *London Times* says: "That so strong is the prejudice in that city in favor of chickens with white legs, as table birds, that from fifteen to twenty per cent. more will be paid for these than for such as have black or dark legs." While it is true that many persons in this country prefer white-legged (white legs indicate white skin) fowls for the table, the great mass care more for the *condition* of birds than for the complexion of their legs. E.

ROUP.—As this is the season when fowls are apt to be more or less troubled with Roup, permit me to give a remedy which may prove useful to some of your readers. Wash the head of the diseased bird morning and evening with tepid water and castile soap, and give a bolus of lard and flour of sulphur mixed, of the size of an English walnut. Alum water may be used to cleanse the throat and mouth, if these are much affected. The fowl should be put in dry and comfortable quarters by itself till the disease is arrested. An English remedy for Rouse is to "Wash daily, once or twice, in tepid water, and give one grain of sulphate of copper mixed with oatmeal in ale, and give plenty of green food." E.

CURE FOR CHICKEN CHOLERA.—*Mr. Editor*: Chicken Cholera has prevailed to a greater or less extent for several years in

many of the Western and Southwestern States, and thousands upon thousands of valuable birds have been carried off by it. Having met with a remedy for this disease in my recent reading, I send it to you for publication, hoping that it may be of advantage to some of your readers. A gentleman of Iowa, writing to the "Department of Agriculture" of that State, says:

"My chickens have been dying of Cholera for the last two years,—even turkeys have died of the same disease. When I notice the hens begin to droop and look sleepy, I give them three or four tablespoonfuls of strong alum-water, and repeat the same the next day. I also mix their feed (say Indian meal) with strong alum-water, feeding twice a day for two or three days,—afterward once a week. Since commencing this practice I have not lost any."

Another gentleman, writing to the same "Department," says: "Take two eggs, one tablespoonful of finely pulverized alum, and a sufficient quantity of flour to make a thin paste, and force the chicken or turkey to swallow a portion of the mixture, and there are two chances to one that it will recover. I have used this remedy for two years with success. I have also used alum, once a day, in their food as a preventive, when this disease is prevalent. Fowls should never have access to swill tubs or any other kind of sour food. E.

RAILROAD EXCURSION.—The Illinois Central Railroad Company have the credit of being the first managers of a line of transportation, with sufficient acumen to recognize the value to the country, and thereby the increased value to their roads, by the observation and researches of leading horticulturists. By the courtesy of the managers of the above-named road, a large company of Illinois horticulturists have been passed over it *free*, while visiting different fruit-growers and fruit-growing points for the purpose of examining and

comparing modes of culture, varieties of fruits, soils, etc. We commend the example to other railroad managers, hoping that ere long they will be enabled to clear their brains sufficient to understand that in fruit-growing there are many men who travel to obtain and disseminate knowledge without a thought of pecuniary personal gain, and that to the labors of such men the increase of fruit-growing and consequent increase of transportation is largely to be attributed; hence a little courtesy and liberality extended them would be creditable to the managers as well as productive of increased good feeling of fruit-growers toward the road.

TIME TO CUT GRAFTS.—We have no doubt that the best time to make cuttings to be used for grafting the pear, cherry, apple, plum, or grape is just before severe frost of winter. The wood is then full of vitality, has lost nothing in evaporation by drying, cold winds, nor have its sap veins or vessels been in any way injured by contraction and expansion of extreme cold. The grafts or cuttings made early in or just before winter may be packed away in damp sand or moss in a cool cellar, where they will keep fresh, and when used in spring will be found much more certain to grow than grafts cut during or after mid-winter, and more or less injured or reduced in vitality from exposure to vicissitudes of climatic action.

LAWRENCE, KANSAS, Sept. 20th, 1868.

MR. EDITOR: *Dear Sir*—I have often read advertisements in the *HORTICULTURIST* of grapevines two and three years old, and wondered if anybody would buy them, and if so, what could they do with them. But you, of course, will excuse my ver-dancy when I tell you that I have been in the far West over twenty years, and for the last fourteen years on the great American Desert. Now, we grow vines out here,—yes, and grapes too; and we make wine (not composition) of pure grape juice.

I send you by U. S. Express, prepaid, one vine of Rogers' Hybrid No. 3, grown from a single bud; said bud was put in the sand-bed on the 2d of March last; was kept in the propagating-house until the 4th of May; then it was planted in the field, where it remained until September 21. This vine is an average of about 12,000 grown in the same way, and my reason for sending it to you is to know if in your opinion we have any need of two and three year old vines, or if you would prefer layers or cuttings of vines to such as this?

ILLINOIS.

[The vine was duly received, and is the largest vine we ever saw that was raised from a single eye in one season.—Ed.]

DETROIT, Sept. 23, 1868.

MR. EDITOR: *Dear Sir*—Most authorities on "Grape Culture under Glass" advise shutting graperies close at night.

Adopting this theory in the case of a cold grapery, I was formerly troubled by more or less mildew. For the last three years I have tried the experiment of *never* allowing the grapery to be closed entirely. On the contrary, the three sashes in the top glass have not been closed at all after danger from frost had passed in the spring, during the above time, till into November. Not only this,—I have lattice doors at each end of the grapery, and these are the only ones used during the same time. Whether the result is a consequence or merely a coincidence, I am unable to say. I have not been troubled with mildew. I tried the experiment, however, on a hypothesis of my own, and have not had any reason to regret it. My cold grapery is 35 feet long and 15 feet wide,—a "lean-to."

I am yours truly,

J. WILEY.

[We have always practiced and advocated abundant ventilation to grape houses, day and night, after the season is sufficiently advanced that the nights have become warm. The system of ventilation recommended by some authors, varying with almost every hour of the day, we consider

useless to a great extent. If sudden storms arise, or great changes of temperature take place, we should close all ventilators for the time being, but in warm fair weather keep them continuously open. Any system of ventilation, however, will not prevent mildew. We have seen our correspondent's plan tried this present season, even to the lattice doors, and the vines were attacked with mildew in its worst form, which was only checked by sulphur applied with sulphur bellows. In another case, the house was kept constantly open, but mildew attacked the vines when in bloom. In former years these houses have neither of them suffered.—Ed.]

NATIVE WINES.—We are indebted to Captain John Spalding, and also to Mr. Oliver Alger, of Cleveland, Ohio, for sample-bottles of wines made by themselves, and sent with request for remarks, which, accordingly, having drank the wine, we proceed to make as follows. The Norton's Virginia of Captain Spalding is a *heavy* wine, we think too heavy, and that the addition of spirit he has made is against it for present use. If kept four years, carefully, however, we think it would rival nine-tenths of the best Burgundy sold. The idea of reducing acid by addition of spirit to kill it, as it were, we do not coincide in.

The Delaware, from the same source, would rank as about 86 to 88 in a scale calling 100 best; and if, as the maker says, it was made from grapes, of which the best had been selected and sold, we can only say, Next time keep all, and you may be certain to make a wine equal to any grower of the same grape. Mr. Alger's wine is from the Concord, grown on a sandy loam, is one year old, viz., from the vintage of 1867, and *without* anything but the juice of the Concord grape itself. It is a good sample of claret. We have drank many a bottle of "Chateaux Margeux" label that did not begin to be as good. Our thanks for these samples. They show us progress in the way of wine-making in the hands of

amateurs, and also an additional testimony of the value of these varieties of grapes grown in Northern Ohio.

F. W. WOODWARD, Esq.—*Dear Sir:* Can you inform me by what means florists insure the germination the first year of the seeds of the tree peonia? One of our most distinguished originators of new fruits and flowers, whose tree peonias have received the admiration of the public, has always been compelled to work at disadvantage in this respect. He tells me that professional florists have not been found willing to impart to others their secrets. He has shared with me his seeds, and I take the liberty to make this inquiry. Truly yours, etc.,

CYRUS G. PRINGLE.

CHARLOTTE, VERMONT, Nov. 3d, 1868.

[In the ordinary process of nature, if the seed of the tree peonia is sown as soon as gathered, in sharp loamy sand, and in a cold frame, where it can have frost and moisture to dissolve and soften its outer rind, bark, or cuticles, without too much water to cause the seed germ to rot, nearly every seed will germinate the *second* spring after sowing. It is never safe to allow the seed to become fully dried. Occasionally, if the autumn after sowing prove warm and moist, a certain portion of the seeds become so softened in the outer rind as to push forth and grow the first season after sowing, but it is only occasionally, and can not be relied upon. If it is desired to hasten development the spring following growth of the seed, then place the seed as soon as gathered in sand, and keep it constantly subject to a gentle, but steady, moist bottom-heat, such as is obtained over the tank of a hot-water propagating bed. We have known some growers to scald lightly before sowing, but our own experience is against it, we having lost our seed always when we scalded. It is possible we overdid the thing, as the process evidently must tend to assist in breaking loose the covering of the germ, and if at once placed in the soft, moist, bottom-heat of a propagating tank

or bed, there is good reason to look for an advanced season of sprouting.]

THE BLACK CAP RASPBERRY seems to be somewhat mixed up in names. Not being a special lover of Black Cap Raspberries ourself, we have paid but little attention to them, other than to grow a few of the varieties, and examine fruit whenever it came before us. We have received a number of letters asking us to unravel the mystery, which we should be happy to do if we could. Some of our correspondents hint strongly that the Mammoth Cluster and Big Miami or McCormick are one and the same, which, judging from the accounts of history published in the *Prairie Farmer* may be possible. We by request copy these histories, and trust to grow and fruit plants under both names another season.

The following letter, from Mr. W. E. Mears, an old resident of Ohio and most reliable gentleman, gives facts regarding the Miami and McCormick varieties.

MILFORD, OHIO, Sept. 23, 1868.

About twenty-five years ago a cousin of mine named McCormick, living in Stonelick township, of this (Clermont) county, Ohio, and on one of the streams that empty into the Little Miami, removed a small cluster of plants from the forest to his garden. In a few years he had so increased the supply of these, which he supposed the Common Black Cap, that he made his appearance in the market with the fruit always, somehow, a week or ten days later than ours on the Miami. We supposed for years that it was his *cold oak soil* that made the berries so much later.

After I engaged in the plant trade in 1850, I obtained McCormick's variety, and after growing them alongside of my own, was satisfied they were distinct; and Dr. Warder and myself called them the Miami, to distinguish them from the common American Black Cap in general cultivation. To Dr. Warder I gave a hundred plants, which he sent to some one East,—I do not recollect to whom.

The variety, I am pretty certain, was not much disseminated until McCormick sold out here, about ten years ago, and settled on the bluff east of St. Louis, in Illinois, near Collinsville. There he planted largely, and in two or three years sold out to his brother-in-law, Mr. Coombs, who is still there, and growing the "Miami McCormick" extensively for the St. Louis market. It has gone into other hands, and is at this time scattered broadcast—except in my old and the original raspberry community around Mt. Washington, as now called, where they have never cultivated the McCormick. Hence plants from that locality would turn out "Little Miami," and the true McCormick, when obtained, would prove the "Big Miami."

Last fall, at the Illinois State Horticultural Society meeting at Cobden, I proposed changing the name from Miami to McCormick, in order to avoid the confusion I foresaw coming in these Black Caps, so different, yet all from the Miami region of country. It is due McCormick that his name should attach to that variety, without doubt the *largest, best, and most productive* Black Cap ever grown. I append a description.

McCormick Raspberry, syn. "Miami," by which name mostly grown. Origin, Stonelick Township, Clermont County, Ohio, on the farm of Geo. W. McCormick, and by him first cultivated about 1880 or '82. Growth, very strong and upright; canes, brown, covered with thick white bloom; leaves, darker than the common Black Cap; fruit, of larger size than any other Black Cap, less seedy, and borne in large clusters, often as compact as a bunch of Diana grapes; fruit, grayish black, changing to purplish gray after being picked a few hours. It is rich and juicy, but carries well to market; very productive.

W. E. MEARS.

LILIUM AURATUM RUBRUM VITATUM.—If any one has bulbs of this variety, they will oblige by informing us.

ALL fruit-trees are liable under the best of cultivation to have more or less insects harbor on them. This month, as soon as the leaves have fallen, will be found a profitable season to paint or wash them, bodies and all, the main limbs and crotches, with some kind of alkali wash. We practice putting up a leach of wood-ashes, and using the lye therefrom; but a wash from commercial potash will perhaps be equally good. The mingling a little of flour of sulphur or common soot, so as to form a thin paint, is by some counted better than the clear lye.

HOLLYHOCKS left in the open ground should have the old flower stems cut down, and a covering of three or four inches of manure spread over their crowns, the manure to be lightly forked under in spring.

ROOT PRUNING GRAPEVINES.—We practice root pruning of the pear, apple, etc., for the purpose of checking redundancy of growth, and believe the same practice may be useful in the cultivation of our native grapevines. In many soils such varieties as the Isabella, Clinton, Concord, etc., are disposed to form so much length of vine as to tax well the patience and skill of the most intelligent viticulturist. They often go elongated, and exhaust thereby the shoots, that few are left with strong buds fitted for fruit-bearing another year. The practice of annual winter pruning, cutting back severely, is only an inducement to creation of a great amount of new wood, for all the root is left, and its supplies must find vent in foliage at the proper season. If at the same time we prune the vine, say in this month of November, we also, by use of a long, sharp spade, go around the vine and cut off the roots, may we not reasonably look for a reduced tendency of the vine to elongate its wood branches, and a greater probable prospect of the fruit being supplied in a greater degree, by reason of the lessened action in the whole system? We hope some one or more

vignerons, and especially those who are troubled with excess of vine and foliage, will try root this autumn, and report to us another season the result.

SURFACE DRAINAGE is all-essential to young vineyards or plantations of dwarf pears. We have known young vineyards on underdrained grounds almost entirely killed out by leaving the vines to pass the winter without care relative to surface draining, but depending exclusively on the underdrains to relieve the roots at all times from superabundant moisture. A slight strain of thought, sufficient to bring to memory the many days we often have during winter months, when the surface is free from frost two, three, and four inches deep, but all below locked in impenetrable rock by frost, should convince any reasonable person of the advantage, if not necessity, of giving winter surface drainage to all plants whose main dependence on life is from the surface roots.

BOOK NOTICES.

HOW CROPS GROW. This work is by Professor Johnson, of Yale College, and contains a fund of valuable information for the student in agriculture or horticulture. Besides giving the components and principles which make up plant life, it is also to an extent an explanatory dictionary of terms used in designating plants and parts thereof. The book is abundantly and handsomely illustrated, and printed in the clear bold type and superior manner that pertains to all of its publishers' works. New York: Orange Judd & Co., Publishers. Price, \$2.

THE WINE-MAKER'S MANUAL. By Charles Reemelin. The increased extent of vine culture in this country brings with it more and more of a desire for knowledge in the way of transforming the surplus of the crop into good wine. To meet this demand, this book before us has in it much of plain practical instruction, but without

anything specially new. The author approves and advocates the practice of Gallicizing, and through it imagines a wine standard will be created free from the *spirit* of the British, the *acid* of the German, or the sweet character of the Spanish. To the new beginner, the work will be found an acquisition, and it is well worth the attention of all vine-growers. Cincinnati, Ohio: Robert Clarke & Co., Publishers. Price, \$1 25.

FARM TALK. This is a series of short chapters upon various farming labors and cares. It is written in a *plain* and supposed common style of conversation, and while the practical teachings are good, we can not but dissent from the style. It may be too true, that some few of our farmers are so uneducated as to converse in the rude manner here presented; but to place such manner in book form for the reading and education of the young, we do not think indicates a correct principle in the way of advancement of mind, and certainly its acceptance as a rule of New England farm-life conversation will not speak highly of the education of her rural population. It is published by Lee & Shepard, Boston. Price, \$1.

ANNOUNCEMENT.

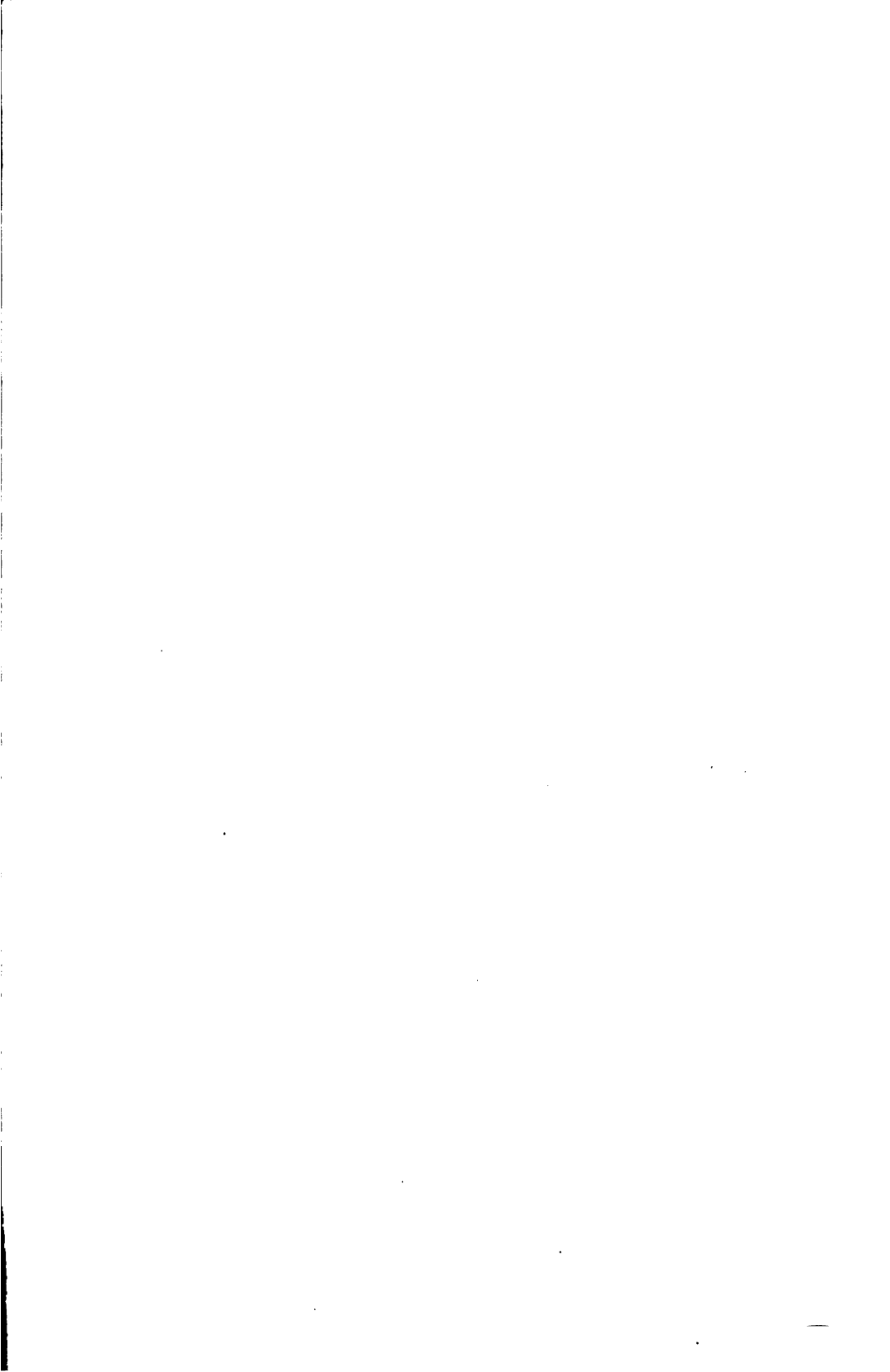
WITH this number we close our record of the past year's progress in pomology, floriculture, and rural topics, and look with a feeling of much satisfaction at our pages, filled with descriptions and illustrations of nearly every new fruit and flower that has appeared in the horticultural world, many of which, through the courtesy of contributors and correspondents, we have been foremost in describing. From other journals we have selected and condensed such items as appeared to us of interest as containing some new theory or practice, or as giving valuable information on topics relating to country life.

With the commencement of the new year the proprietorship and editorial charge of

the HORTICULTURIST will pass into the hands of Mr. HENRY T. WILLIAMS, now connected with the New York *Independent* as Horticultural and Agricultural editor, who, in assuming the management of the Magazine, will make several important changes for the better.

While retaining all the old corps of contributors, his endeavor will be to secure the services of many new writers on practical subjects. It will be the aim, as it is the intention, of the new proprietor to make the HORTICULTURIST an indispensable companion to every one who owns a garden, an orchard, or plot of ground, however small. With one exception, the HORTICULTURIST is the oldest magazine of its kind in the country, and has long been considered by our best pomologists the standard work on the subjects of which it treats. Many subscribers have been with us from the commencement of this journal by A. J. Downing in 1846, now over twenty-two years, and the value to them of their volumes is far above a pecuniary one, containing, as they do, a history of the progress of horticulture for nearly a quarter of a century. To such, as well as our subscribers and readers of later years, we say that the future of the Magazine bids fair to exceed its past. Energy, ability, and practical knowledge will be brought to the work of filling its pages with such information as no grower of fruits, flowers, or vegetables can afford to dispense with. In parting with the Magazine, the new proprietor has our best wishes for success in his undertaking, and we take pleasure in assuring our readers that they will be great gainers by the change.

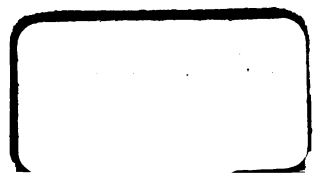
For the present, the publication department will be under our charge, and all communications relating to business may, as heretofore, be addressed to us. We cordially invite all our old subscribers to renew their subscriptions for 1869; and should be pleased if each of them would send at least one new patron for the coming year.





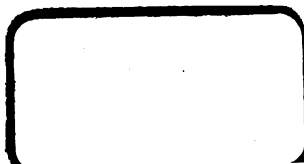
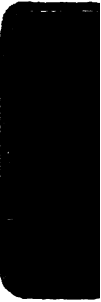


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